

TECHNICAL MANUAL

FOR

**FRYER, ELECTRIC, MODELS
FPH17, H14/H17/H22KW
H14 SUB SERIES**

**DESCRIPTION, OPERATION, AND
MAINTENANCE**

**Distribution Statement A: Approved for public release;
distribution is unlimited.**

**DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND**

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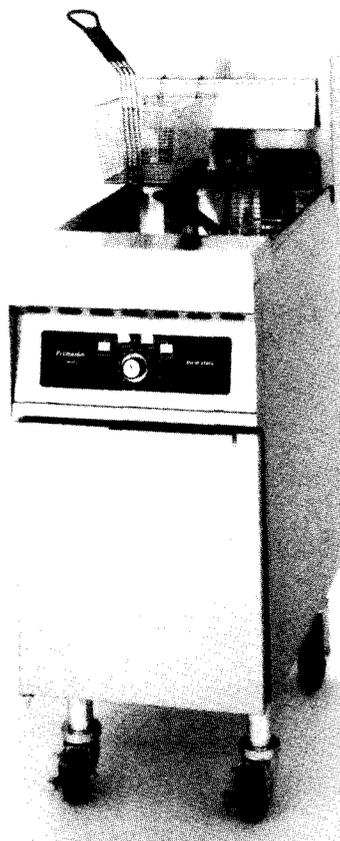
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Date: August 15, 2001

The Frymaster Corp.
8700 Line Ave
P.O. Box 51000
Shreveport, LA 71135-1000
CAGE No. 95284

OPERATOR'S GUIDE

ELECTRIC FRYERS H14/H17/H22 KW EPH14/EPH17 KW



Frymaster[®]

A **WELBILT** Company

Frymaster L.L.C., 8700 Line Avenue 71106, P.O. Box 51000, Shreveport, Louisiana 71135-1000
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PRINTED IN THE UNITED STATES

SERVICE HOTLINE
1-800-551-8633

819-5473 4/98



FRYMASTER ELECTRIC FRYERS ARE MANUFACTURED FOR USE WITH THE TYPE VOLTAGE SPECIFIED ON THE FRYER RATING PLATE LOCATED ON THE FRYER DOOR. FOR PROPER INSTALLATION PROCEDURES IN THE UNITED STATES, REFER TO THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE ANSI/N.F.P.A. NO. 70; IN CANADA, CANADIAN ELECTRICAL CODE PART 1, CSA-22.1. INFORMATION ON THE CONSTRUCTION AND INSTALLATION OF VENTILATING HOODS MAY BE OBTAINED FROM THE LATEST EDITION OF THE "STANDARD FOR THE INSTALLATION OF EQUIPMENT FOR THE REMOVAL OF SMOKE AND GREASE LADEN VAPORS FROM COMMERCIAL COOKING EQUIPMENT, "N.F.P.A. NO. 96. COPIES OF THESE ELECTRICAL STANDARDS ARE AVAILABLE FOR THE NATIONAL FIRE PROTECTION ASSOCIATION, BATTERY MARCH PARK, QUINCY, MASS. 02269

WARNING

IN THE EVENT OF A POWER FAILURE, THE FRYER(S) WILL AUTOMATICALLY SHUT DOWN. SHOULD THIS OCCUR, TURN THE POWER SWITCH OFF. DO NOT ATTEMPT TO START THE FRYER(S) UNTIL POWER IS RESTORED.

THE FRYER(S) MUST BE INSTALLED WITH A SIX-INCH (15 cm) CLEARANCE AT BOTH SIDES AND ADJACENT TO COMBUSTIBLE CONSTRUCTION. A MINIMUM OF 24-INCHES (60 cm) SHOULD BE PROVIDED AT THE FRONT OF THE FRYER(S) DOOR.

THIS MANUAL SHOULD BE KEPT IN A CONVENIENT LOCATION AND REFERRED TO WHEN ANY PROBLEM OCCURS AND FOR FUTURE REFERENCE.

FOR YOUR SAFETY, DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

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1. PARTS ORDERING/SERVICE INFORMATION

Parts orders must be placed directly with your local Frymaster Parts Distributor. A list of Frymaster Parts Distributors was included with the fryers when shipped from the factory. If you do not have access to this list, please contact the Frymaster Technical Services Department at 1-800-551-8633 or 1-318-865-1711.

To help speed your order, the following information is required:

Model Number: _____

Serial Number: _____

Type of Gas or Voltage: _____

Part Number: _____

Service information may be obtained by calling your local Factory Authorized Service Center. A list of these agencies was packed with your fryer.

Service information may also be obtained by calling the Frymaster Technical Services Department. When calling, please have the following information available:

Model Number: _____

Serial Number: _____

Type of Gas or Voltage: _____

Nature of Service Problem: _____

And other information that may be helpful in solving your service problem.

PARTS ORDERING/SERVICE INFORMATION
CANADA -- Garland Commercial Ranges, Ltd.,
1177 Kamato Road, Mississauga, Ontario
L4W1X4.

NOTE: RETAIN AND STORE THIS MANUAL IN
A SAFE PLACE FOR FUTURE USE.
ADDITIONAL COPIES MAY BE OBTAINED
FROM YOUR AUTHORIZED SERVICE CENTER.

2. IMPORTANT INFORMATION

2.1. Introduction

The H14, H17, H22 Series are deep-well, open pot fryers designed for cooking fried products. H14, H17, H22 models come in full or split, open-pot arrangements. Read the instructions in this manual thoroughly before attempting to install, operate or service this equipment.

2.2. Operating, Installation, and Service Personnel

Operating information for FRYMASTER equipment has been prepared for use by qualified and/or authorized operating personnel only.

All installation and service on FRYMASTER equipment must be performed by qualified, certified, licensed, and/or authorized installation or service personnel.

Service may be obtained by contacting your local Factory Authorized Service Center.

2.3. Definitions

Qualified and/or Authorized Operating Personnel

Qualified or authorized operating personnel are those who have carefully read the information in this manual and have familiarized themselves with the equipment functions or have had previous experience with the operation of equipment covered in this manual.

Qualified Installation Personnel

Qualified installation personnel are: individuals, a firm, corporation, or a company which either in person or through a representative are engaged in, and are responsible for the installation of electrical wiring from the building electric meter, main control box, or service outlet to the electrical appliance. Qualified installation personnel must be experienced in such work, be familiar with all electrical precautions required, and have complied with all requirements of applicable national, European Community and local codes.

Qualified Service Personnel

Qualified service personnel are those familiar with FRYMASTER equipment and have been

authorized by THE FRYMASTER CORPORATION. All authorized service personnel are required to be equipped with a complete set of service parts manuals and stock a minimum amount of parts for FRYMASTER equipment.

A list of Frymaster Factory Authorized Service Centers was included with the fryer when shipped from the factory. If you do not have access to this list, please contact the Frymaster Customer Service Department, using the number listed on the front of this manual. Failure to use qualified service personnel will void the Frymaster warranty.

2.4. Shipping Damage Claim Procedure

Please note that the FRYMASTER equipment was carefully inspected and packed by skilled personnel before leaving the factory. The transportation company assumes full responsibility for safe delivery upon acceptance of the equipment.

What to do if equipment arrives damaged:

1. File Claim for Damages Immediately--Regardless of extent of damage.
2. Visible Loss or Damage--Be sure this is noted on the freight bill or express receipt and is signed by the person making the delivery.
3. Concealed Loss or Damage--If damage is unnoticed until equipment is unpacked, notify freight company or carrier immediately and file a concealed damage claim. This should be done within 15 days of date of delivery. Be sure to retain container for inspection.

FRYMASTER DOES NOT ASSUME RESPONSIBILITY FOR DAMAGE OR LOSS INCURRED IN TRANSIT

3. INSTALLATION INSTRUCTIONS

PROPER INSTALLATION IS ESSENTIAL TO EFFICIENT TROUBLE-FREE OPERATION. ANY ALTERATION OF THE EQUIPMENT VOIDS THE FRYMASTER WARRANTY.

Before installing the newly-arrived equipment, inspect it carefully for visible and concealed damage. See *Shipping Damage Claim Procedure*, Section 2.4.

3.1. CASTER/LEG INFORMATION

If it is necessary to install caster/legs, use the instructions provided in the accessories package shipped with the fryer.

CAUTION: If you need to relocate a fryer installed with legs, remove all the weight from each leg before moving. If a leg becomes damaged, contact your service agent for immediate repair or replacement.

4. ELECTRICAL SERVICE CONNECTIONS

Electric fryers may have the power cord installed at the factory. In the event the power cord need be installed, refer to the label affixed to the rear of the fryer for specific wiring information.

Connections should be made by means of an approved, flexible-metallic or rubber-covered electrical cable and quick-disconnect plug. This connection should be made to the fryer power input terminal block. The terminal block is located in the component box in the bottom of the fryer. **CONNECTIONS MUST BE MADE BY QUALIFIED PERSONNEL ONLY AND MEET NATIONAL AND LOCAL CODES**

CAUTION: The fryer(s) **MUST** be connected to the voltage and phase as specified on the rating and serial number plate located on the fryer door. To determine the proper wire size and amperage service per fryer, use the chart on the next page.

CAUTION: A ground wire **MUST** be connected to the **GROUND** terminal provided near the input power terminal block.

CAUTION: Note the following before connecting the fryer to an emergency cutoff system:

- Be sure that each fryer is connected to a dedicated set of contacts in the emergency cutoff system.
- Do not attempt to connect the contacts in series.
- Do not connect more than one fryer to each set of contacts.
- The contacts **MUST BE** normally closed contacts that open during the emergency.
- The contacts **CANNOT** have an external voltage applied.

5. POWER REQUIREMENTS

WARNING:

For power supply connection, use copper wire ONLY, suitable for at least 167°F(75°C).

MODEL	VOLTAGE	PHASE	WIRE SERVICE	MIN. SIZE	AWG (mm ²)	AMPS PER LEG		
						L1	L2	L3
H14	208	3	3	6	(16)	39	39	39
H14	240	3	3	6	(16)	34	34	34
H14	480	3	3	8	(10)	17	17	17
H14	220/380	3	4	6	(16)	21	21	21
H14	240/415	3	4	6	(16)	20	20	21
H14	230/400	3	4	6	(16)	21	21	21
ALL EPH14 SERIES (EPRI)	208	3	3	6	(16)	39	39	39
	240	3	3	6	(16)	34	34	34
	220/380	3	4	6	(16)	21	21	21
	240/415	3	4	6	(16)	20	20	20
H17	208	3	3	6	(16)	48	48	48
H17	240	3	3	6	(16)	41	41	41
H17	480	3	3	6	(16)	21	21	21
H17	220/380	3	4	6	(16)	26	26	26
H17	240/415	3	4	6	(16)	24	24	24
H17	230/400	3	4	6	(16)	25	25	25
ALL EPH17 SERIES (EPRI)	208	3	3	6	(16)	48	48	48
	240	3	3	6	(16)	41	41	41
	220/380	3	4	6	(16)	26	26	26
	240/415	3	4	6	(16)	24	24	24
H22	208	3	3	4	(25)	61	61	61
H22	240	3	3	4	(25)	53	53	53
H22	480	3	3	6	(16)	27	27	27
H22	220/380	3	4	6	(16)	34	34	34
H22	240/415	3	4	6	(16)	31	31	31
H22	230/400	3	4	6	(16)	32	32	32

The electrical power supply for the fryers **MUST** be the same as indicated on the rating and serial number plate located on the fryer door.

6. OPERATING INSTRUCTIONS

6.1. AFTER FRYER(S) HAVE BEEN INSTALLED AT FRYING STATION:

1. To level fryers equipped with legs, the bottom of the legs can be screwed out approximately one inch for leveling. Legs should be adjusted so that the fryer(s) are at the proper height in the frying station.

For fryers equipped with casters, there are no built-in leveling devices. The floor where the fryers are installed must be level.

NOTE: If you need to relocate a fryer installed with legs, remove all the weight from each leg before moving. If a leg becomes damaged, contact your service agent for immediate repair or replacement.

2. Close fryer drain valve(s) and fill frypot with water to the bottom oil level line.
3. Boil out frypot(s). See *Boil-Out* instructions this page.
4. Drain, clean, and fill frypot(s) with cooking oil. See *Filling With Shortening*.
5. Check thermostat calibration on fryers with solid-state controller. See Section 15 on Page 20.

6.2. BOILING OUT THE FRYPOT:

Clean frypot(s) as follows before filling with cooking oil/shortening for the first time and at least once a month thereafter:

1. Before switching the fryer(s) ON, close the frypot drain valve(s), fill empty frypot with mixture of cold water and Frymaster Fryer 'N' Griddle Cleaner. Follow instructions on bottle when mixing.
2. Press fryer ON/OFF switch to the ON position. Set the melt switch to OFF if your fryer is equipped with an analog controller.
3. Set thermostat knob or digital controller to 200°F (93°C) or program computer for Boil Operation as outlined in Programming Instructions.

4. Simmer the solution for 45 minutes to one hour. Do not allow water level to drop below the bottom oil-level line in frypot during boil-out operation.

CAUTION: Do not leave fryer unattended. The boil-out solution may foam and overflow if fryer is left unattended. Press ON/OFF switch to the OFF position to control this condition.

5. Turn the fryer ON/OFF switch(es) to the OFF position.
6. Add 2 gallons of water. Drain out the solution and clean the frypot(s) thoroughly.
7. Refill the frypot(s) with clean water. Rinse the frypot(s) twice, drain and wipe down with a clean, dish towel.

CAUTION:
ALL DROPS OF WATER MUST BE REMOVED FROM FRYPOT BEFORE FILLING WITH COOKING OIL/SHORTENING.

6.3. FILL WITH COOKING OIL/SHORTENING

Cooking oil/shortening capacity of H14, H17, H22 Series fryers is 50 lbs. (25 liters (cold 70°F)) for a full pot and 25 lbs. (12.50 liters (cold 70°F)) for each half of a split frypot.

6.3.a. Before filling the frypot(s) with cooking oil/shortening:

1. Close the frypot drain valve.
2. Place the power switch(es) to the OFF position.
3. Remove the basket support rack.

CAUTION: If you use *solid shortening*, raise the elements and tightly pack pieces of shortening into the bottom of the frypot. Continue to tightly pack the shortening, then lower the elements. Pack additional shortening in between and on top of the elements until level with the bottom oil level line. Place the basket support rack on top of the shortening, then go to Step 6.

4. Fill the empty frypot(s) to the bottom oil-level line.
5. Replace the basket support rack on top of the heating element.
6. Place the ON/OFF switch to the ON position.

7. Set the controlling device (computer/controller) for normal cooking temperature. Be sure the controller is set to MELT CYCLE. The fryers will operate in the melt cycle mode until the shortening temperature reaches 180°F (82°C). The EPRI fryer with a digital controller will operate in a melt cycle mode until the shortening temperature reaches the set-point temperature.

When using solid shortening....

To prevent damage to the frypot and scorching the shortening, ALWAYS use the melt cycle.

6.4. BEFORE RELOCATING FRYER.....

WARNING:

Moving a fryer filled with hot cooking oil/shortening may cause splattering. Extreme care must be exercised. It is recommended that the operator or servicer follow the draining instructions of this manual before attempting to relocate the fryer.

If you need to relocate a fryer installed with legs, remove all the weight from each leg before moving. If a leg becomes damaged during movement, contact your service agent for immediate repair/replacement.

1. Turn off fryer controller/computer. Unplug the power cords from the source.
2. Relocate the fryer for service accessibility.
3. After servicing is complete, return the fryer to the operating position. Plug all power cords into source. Attach the restraining devices.

7. DRAINING AND MANUAL FILTERING INSTRUCTIONS

WARNING:

Use care when draining and filtering cooking oil/shortening to avoid serious burns.

7.1. FILTERING

If you are using a filter other than a Frymaster Built-In Filter System (FootPrint or Filter Magic system), consult the filter manufacturer's operation instructions for the recommended filtering procedure. Instructions for using the Filter Magic and Footprint filtration system are included in this manual.

7.1.a. "Manual" Draining/Filtering

The following procedure is recommended to drain and filter your cooking oil/shortening when a filter machine is not available:

1. Turn the fryer computer/controller switch to the OFF position. Screw the drain pipe (provided with fryer) into the drain valve. Make sure the drain pipe is firmly screwed into the drain valve and that the curved end is pointing down.
2. Position a metal container with sealable cover under the drain pipe. The metal container must be able to withstand the hot cooking oil/shortening and hold hot liquids. Frymaster recommends that a Frymaster filter cone holder and filter cone be used when a filter machine is not available. If you are using the Frymaster filter cone holder and cone, be sure that the cone holder rests securely on the metal container.
3. Open the drain valve slowly to avoid splattering. If splattering occurs, exercise extreme caution.
4. If the drain valve becomes clogged with food particles, use the Fryer's Friend (poker-like tool). Use this tool from the inside of the frypot ONLY. See Figure 7-1. Grip the tool on the handle as far as possible away from the cooking oil/shortening in the frypot. DO NOT hammer on the drain valve, this damages the drain valve ball. DO NOT insert the tool into the front of the drain to unclog the valve, hot oil/shortening will rush out creating an extreme hazard.



Figure 7-1

CAUTION: Allow the oil/shortening to cool to 100°F (38°C) or lower before transporting the container and removing the drain pipe. Oil/shortening temperature of 140°F (60°C) or higher will result in severe burns.

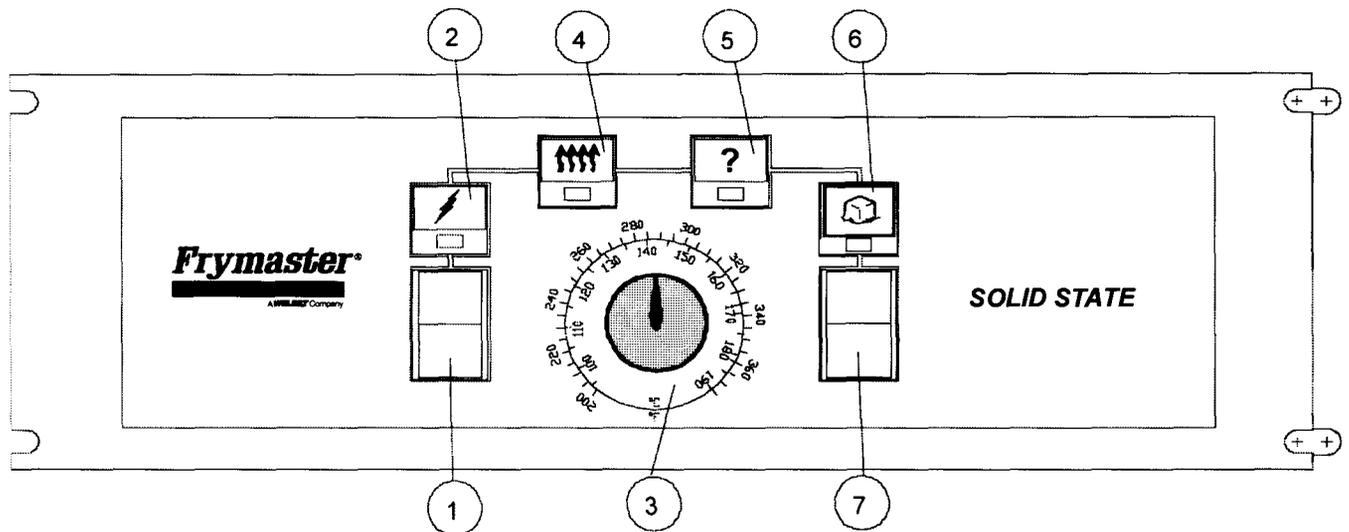
FOR SAFE, CONVENIENT DRAINING AND DISPOSING OF USED OIL/SHORTENING, FRYMASTER RECOMMENDS THE USE OF THE FRYMASTER SHORTENING DISPOSAL UNIT (SDU). THE SDU IS AVAILABLE THROUGH YOUR LOCAL DISTRIBUTOR.

5. After draining the oil/shortening, clean all food particles and residual oil/shortening from the frypot before refilling.
6. Close the drain valve and refill the frypot with clean, filtered oil/shortening.

8. SHUTTING FRYER(S) OFF

1. Press fryer computer/controller/timer ON/OFF switch(es) to OFF position.
2. Put frypot cover(s) in place over frypot(s).

9. ANALOG CONTROLLER



ITEM NO.

1. Power Supply Switch - controls power supply.
2. Power On Light - indicates when electrical power is on.
3. Temperature Control Knob - sets desired frying temperature.
4. Heating Light - indicates element is on.
5. Trouble Light - indicates malfunction of fryer control circuit or overheat condition. Reset by turning the ON/OFF switch OFF for 30 seconds, then ON.
6. Melt Cycle Light - indicates unit is operating in melt cycle mode. Fryer will exit melt cycle mode when shortening reaches 180°F (82°C).
7. Melt Cycle Switch - controls melt cycle operation.

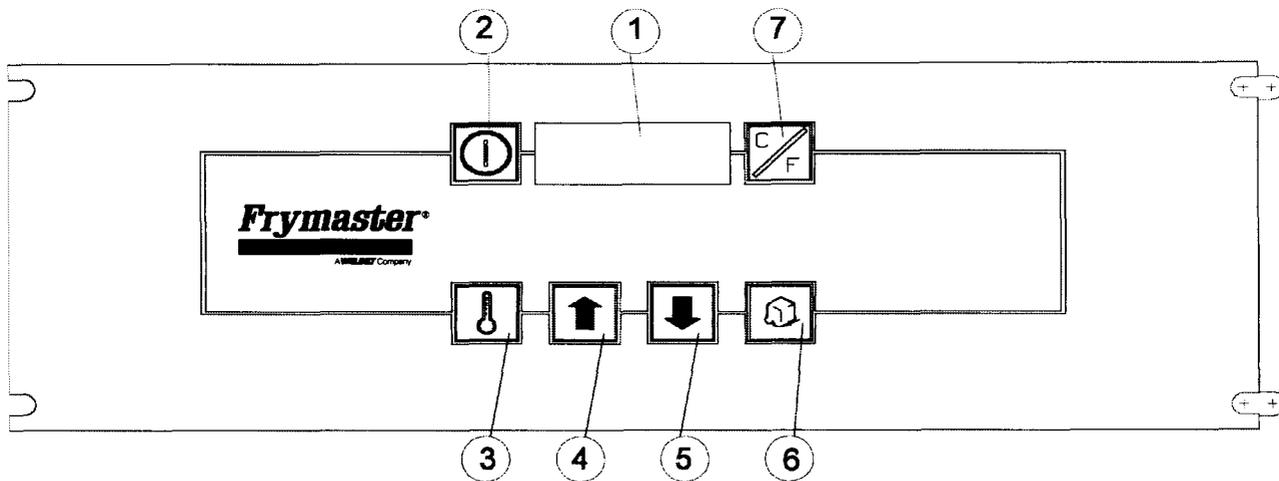
WARNING:

FRYER MUST BE FILLED WITH OIL, SHORTENING, OR WATER BEFORE TURNING ON CONTROLLER.

9.1. THERMOSTAT CALIBRATION - ANALOG CONTROLLER

1. Insert a good grade thermometer or pyrometer probe into the cooking oil/shortening near the fryer temperature sensing probe.
2. Turn thermostat knob to frying temperature.
3. Let elements cycle on and off automatically 3 times in order for the cooking oil/shortening temperature to be uniform. Stir, if necessary, to get all cooking oil/shortening in bottom of frypot melted.
4. When the elements start for the fourth time, the pyrometer reading should be within 5°F (2°C) of the thermostat knob setting. If it is not, calibrate as follows:
 - a. Loosen set screw in thermostat control knob until outer shell of knob will rotate on insert inside knob.
 - b. Rotate outer shell of knob until index line on knob aligns with marking that corresponds to thermometer or pyrometer reading.
 - c. Hold knob and tighten set screw.
 - d. Recheck the thermometer or pyrometer reading and the thermostat knob setting the next time the elements come on.
 - e. Repeat Steps 4.a. through 4.d. until thermometer or pyrometer reading and knob setting agree within 5°F (2°C).
 - f. If calibration cannot be obtained for any reason, call a Factory Authorized Service Center.
5. Remove thermometer or pyrometer probe.

10. DIGITAL CONTROLLER



ITEM NO.

1. Lighted Display - display of various functions and operations.
2. On/Off Switch - controls power supply.
3. Temperature/Set-Point Display Switch - selects cooking oil/shortening temperature or set-point temperature.
4. Up Arrow Switch - raises set-point temperature.
5. Down Arrow Switch - lowers set-point temperature for left side of split pot and for full pot.
6. Melt-Cycle Switch - cancels melt-cycle mode.
7. C/F Switch - selects temperature display in Celsius or Fahrenheit.

WARNING:

FRYER MUST BE FILLED WITH OIL, SHORTENING, OR WATER BEFORE TURNING ON CONTROLLER.

10.1. ENABLE/DISABLE MELT CYCLE BYPASS

- A. The controller can be programmed to enable/disable the melt cycle bypass.
 1. With the controller in the OFF mode, press the Melt-Cycle Switch, Item 6 (for a split pot, press the right side switch). The display will read either a "0" meaning that the melt **can** be bypassed or a "1" meaning that the melt cycle **cannot** be bypassed.
 2. To change the bypass configuration, press and hold the Melt-Cycle Switch for 5 to 6 seconds to toggle the "0" to "1" or "1" to "0". When the display shows the desired setting release the Melt-Cycle Switch.

10.2. OPERATING INSTRUCTIONS - FULL POT

- A. Turn controller on by pressing ON/OFF Switch, Item 2.
 1. The controller software version number will display for 4 seconds then set-point temperature will display constantly. To view actual cooking oil/shortening temperature, press the Temperature Switch, Item 3. On export fryers, the actual shortening temperature will display constantly. To view the set-point temperature, press the Temperature Switch, Item 3.

2. The controller automatically enters melt-cycle mode if oil/shortening temperature is below 180°F (82°C).
3. To cancel melt-cycle mode, press the Melt Switch, Item 6.

CAUTION: Do not cancel the melt cycle if solid shortening is used.

4. When the cooking oil/shortening temperature reaches 180°F (82°C), the controller exits the melt-cycle mode and shuts off.
- B. To set the set-point temperature up or down, press the Up Arrow Switch, Item 4 to raise the set-point temperature, and the Down Arrow Switch, Item 5, to lower the set-point temperature.
1. The display will change at the rate of approximately one degree per second.
 2. After a change of about 12°F, the display will change to a faster rate allowing large changes in set-point temperature to be made quickly.
- C. To change from Fahrenheit to Celsius display, press the C/F Switch, Item 7.

1. Display will change from "XXX°F" to "xxx°C".
2. Display will change back to "xxx°F" by pressing the C/F Switch, Item 7, again.

- D. When the controller has reached the set-point temperature, the heat indicator decimal point will go out, indicating the fryer is ready for the cooking process.

NOTE: The decimal point appearing between the first two numbers of the display indicates the heating source is on.

10.3. OPERATING INSTRUCTIONS - SPLIT POT

- A. Turn controller ON by pressing ON/OFF Switch, Item 2.
1. The controller software version number displays for 4 seconds, then set-point temperature displays constantly. To view actual cooking oil/shortening temperature, press the Temperature Switch, Item 3.
 2. Either side of the controller will automatically enter the melt cycle when that particular side ON/OFF Switch is

pressed if the shortening temperature is below 180°F (82°C).

3. To cancel melt-cycle mode, press the Melt Switch, Item 6, for the desired side.
CAUTION: Do not cancel melt cycle if you use solid shortening.

4. When the shortening temperature reaches 180°F (82°C) in the side that has been turned on or both sides, the controller exits the melt-cycle mode and shuts off.

- B. To set the set-point temperature on either side of the controller, press the Up Arrow, Item 4, to increase the set-point temperature and the Down Arrow, Item 5, to lower the set-point temperature.

1. The left or right display will change at the rate of approximately one degree per second.
2. After a change of about 12°F, the display will change to a faster rate allowing large changes in set-point temperature to be made quickly.

- C. To change from Fahrenheit to Celsius display on either side, press either left or right C/F Switch, Item 7

1. Both displays will change from "xxx°F" to "xxx°C".
2. Both displays will change back to "xxx°F" by pressing the C/F Switch, Item 7, again.

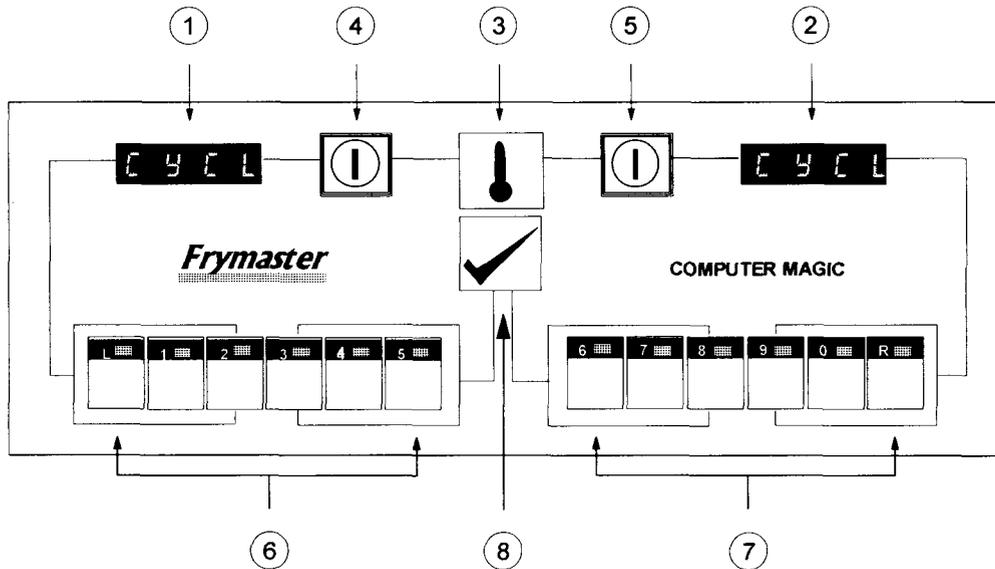
- D. When either side of the controller has reached the set-point temperature, the heat indicator decimal point will go out, indicating the fryer is ready for cooking process.

- E. NOTE: The decimal point appearing between the first two numbers of the display indicates the heating source is on.

- F. Other indications that could be displayed on the Lighted Display:

1. "HOT" and actual frypot temperature - shortening temperature is above 395°F (202°C) (or 410°F [210°C] for CE fryers) which is too hot for most fried products.
2. "PROB" - indicates the controller has detected a problem in the temperature measuring circuits, including probe.
3. "HELP" - indicating latching circuit did not lock in or an internal component failure.

11.COMPUTER MAGIC III OPERATING INSTRUCTIONS



Item No.

1. Lighted Display -- left display of various functions and operations.
2. Lighted Display -- right display of various functions and operations.
3. Storage and Temperature Check Switch -- locks program in computer and/or displays frypot temperature when depressed.
4. ON/OFF Switch -- controls on/off for left frypot.
5. ON/OFF Switch -- controls on/off for right frypot.
- 6/7. Product and Coding Switches -- provides access to computer and programming functions.
8. Programming Switch -- used when reprogramming the computer memory.

CAUTION:

BEFORE TURNING ON COMPUTER, MAKE SURE THE FRYER IS FILLED WITH COOKING OIL/SHORTENING OR WATER.

11.1. OPERATING INSTRUCTIONS

- A. Turn the computer on by pressing the  switch.

1. One of the following displays will appear:

- a. CYCL, indicating that the burner is operating in the melt-cycle mode. Fryer will remain in the melt-cycle mode until it reaches 180°F (82°C) or is canceled manually.
- b. HI, indicating that the pot temperature is 21°F (12°C) or higher than the set point.
- c. LO, indicating that the pot temperature is 21°F (12°C) or lower than the set point.
- d. "----" indicating that the fryer temperature is in the cooking range. NOTE: For best results, do not cook product until the display reads "----".
- e. HELP, indicates a heating problem.
- f. HOT, indicates that the pot temperature is more than 410°F (210°C). (395°F (202°C) for European Community fryers.)
- g. PROB, indicates that the computer has detected a problem in the temperature measuring circuits, including probe.

NOTE: "." decimal point between digits 1 and 2 in either display area indicates that the burner is on.

B. Melt-Cycle Cancel Feature (built-in computers only).

CAUTION: Do not cancel the melt cycle mode if you use solid shortening.

The computer will display CYCL during melt-cycle operation. To cancel melt cycle on a full pot, depress the "R" button. To cancel the melt cycle on a split pot, use "L" button for left side pot and "R" button for right side. CYCL will be replaced by LO. The decimal point between digits 1 and 2 will illuminate indicating that the elements are on.

C. Cook-cycle operation is initiated by pressing the product switch:

1. The basket lift (on fryers so equipped) will lower the product into the cooking oil/shortening.
2. The display will indicate the previously programmed cook time and begin countdown.
3. If shake time is programmed, you will be notified to shake the product "X" seconds after the cook cycle begins (X=amount of time programmed). An alarm will sound and the display will read SH_. The blank will be the switch number. If no shake time is programmed, SH_ will not appear during the cook cycle.
4. At the end of cooking cycle, an alarm will sound; COOC will be displayed and the associated product switch indicator will flash. To cancel the cook alarm, press the flashing product switch.
5. At this time, the hold time will be displayed (if programmed greater than 0) and

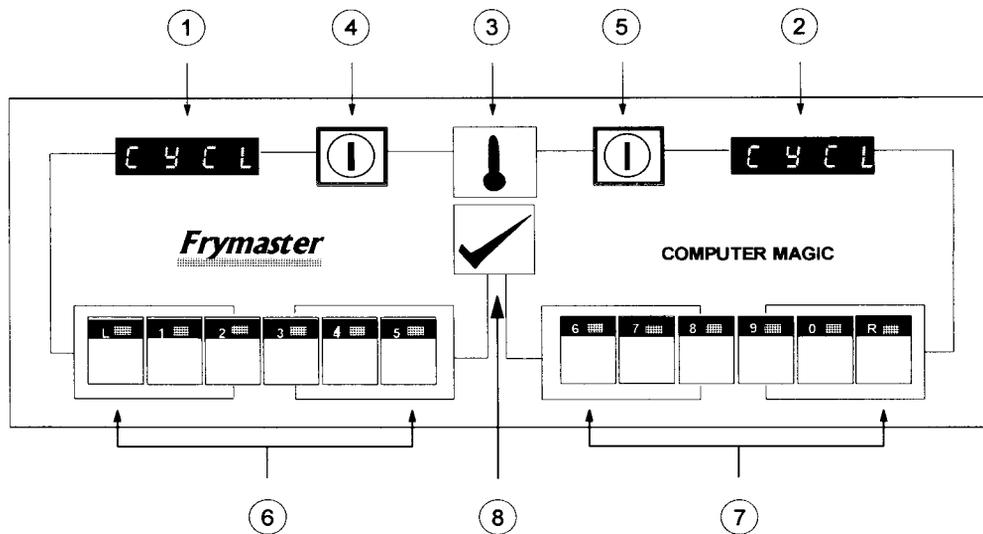
countdown will begin. When the hold time counter reaches 0, an alarm and Hd_ is displayed. The blank will be the switch number. The hold alarm is canceled by pushing the  switch. If display is in use, hold time will count down invisibly until display is free.

11.2. CHECKING TEMPERATURE

- A. Check the cooking oil/shortening temperature at any time by pressing the  switch once. Check the set point by pressing the  switch twice.
- B. During the idle periods, when the fryer is on but not in use, "----" should appear on both displays on a single frypot computer. "----" will appear on the display of the side that is turned on in a dual pot computer. If not, check actual temperature and set point.
- C. If you suspect a defective probe, check the cooking oil/shortening temperature with a thermometer. Verify that the computer readout is reasonably close to your measured reading.

NOTE: The electronic circuitry can be affected adversely by current fluctuations and electrical storms. If the computer does not function or program properly for no apparent reason, reset the computer by unplugging the power cord and plugging it back in.

12.COMPUTER MAGIC III PROGRAMMING INSTRUCTIONS



ITEM NO.

1. Lighted Display -- left display of various functions and operations.
2. Lighted Display -- right display of various functions and operations.
3. Storage Switch -- locks program in computer.
4. ON/OFF Switch -- controls power for left side of dual computer.
5. ON/OFF Switch -- controls power for right side of dual computer.
- 6/7. Product and Coding Switches -- enter code for access to computer and programming functions.
8. Programming Switch -- used to program computer memory.

CAUTION: BEFORE TURNING ON COMPUTER, MAKE SURE THE FRYER IS FILLED WITH OIL, SHORTENING, OR WATER.

12.1. PROGRAMMING INSTRUCTIONS

12.1.a. FULL POT

1. Activate the computer by pressing either switch.

2. To enter the program mode, first press the switch. CODE will appear in the left display. If you have pressed this switch in error and do not wish to program, press the switch again. Note: The computer will flash BUSY if cooking is in progress.
3. Press 1,6,5,0 in that sequence to enter the program mode.
4. "SP-r" (SET POINT) will appear in the left display. This is for setting the cooking temperature. The temperature previously selected will be displayed in the right display. Enter new temperature desired. Press the switch to lock in temperature setting. If you do not wish to change the setting, press the switch.
5. "SELP" (SELECT PRODUCT) will appear in the left display. Press the product button to be programmed.
6. SENS will appear in the left display. The sensitivity number previously selected will be displayed in the right display. Enter the new desired sensitivity number, the range is 1 to 9. Enter "0" for no sensitivity. Press the switch to lock in the setting.

Sensitivity is a built-in feature that adjusts computer cooking time to compensate for the drop in cooking oil/shortening temperature when a basket of product is placed into the fryer. Sensitivity basically shrinks or stretches cooking time to counterbalance variances in product density, basket-load size, and initial temperature. A proper sensitivity setting will ensure a high quality product. For example: 4 ounces of french fries can be programmed to be cooked to the same quality as 2 pounds. A good initial setting is 4 or 5. Some experimenting with the range of 1 to 9 may be required to achieve optimum quality.

7. COOC will now appear in the left display. If a cooking time has been entered before programming, it will appear in the right display. If that time is correct, press the switch. If you wish to change that time, enter the desired numbers. (The new time will be displayed in the left display.) Press the switch to lock in the setting

8. SH- now appears in the left display. The previous shake time (if any) will appear in the right display. If a product requires shaking during the cooking process, set the shake time by pressing the number of minutes to cook before shaking. Press the switch to lock in the time. If no shake time is required, press "0" and press the switch. Example: Total cook time 3:00 minutes, shake after cooking 1:00 minute.

During operation, at the end of the set time, a beeper will sound and the product button indicator will flash for 3 seconds.

9. HD- will now appear in the left display. Set the time you require for holding the cooked product, 13 seconds to 60 minutes. Press the switch. If you do not wish to use the hold time, enter "0" and press the switch.

10. SELP will appear in the left display. If you desire to program more products, return to Step 5. If no more programming is required, lock in program by pressing the switch.

ADDITIONAL HOLD-TIME INSTRUCTIONS

Programming hold timer to another product button
If the same product is being cooked in more than one basket, any product button can be programmed to use the hold timer normally used with a different product button. Example: Program button "3" for 7:00 minutes hold time. Then when programming button "R" for hold time, press address 4. Both "3" and "R" will then use the same hold time of 7:00 minutes. See below for button numbers and their assigned access numbers. Any other button can be programmed to use the same hold time.

Button	L	1	2	3	4	5	6	7	8	9	0	R
Address	1	2	3	4	5	6	7	8	9	10	11	12

12.1.b. SPLIT POT

1. Activate the computer by pressing either switch.
2. Enter the program mode by pressing the switch. CODE will appear in the left display. If you have pressed this switch in error and do not wish to program, press the switch again. NOTE: You cannot program the computer while it is in the cook mode. The computer will flash busy if cooking is in process.
3. Enter 1,6,5,0 in that sequence.
4. "SP-r" (SET POINT) will appear in the left display. This is for setting the cooking temperature for the right pot. The temperature previously selected will be displayed in the right display. Enter new temperature desired. Press the switch to lock in temperature setting. If you do not wish to change the setting, press the switch.
5. "SP-l" (SET POINT) will appear in the left display. This is for setting the cooking temperature in the left pot. The temperature previously selected will be displayed in the right display. Enter new temperature desired. Press the switch to lock in temperature setting. If you do not wish to change the setting, press the switch.

- "SELP" (SELECT PRODUCT) will appear in the left display. Select buttons "L" through "5" for programming the left pot; select buttons "6" through "R" for programming the right pot. Press the product switch to be programmed.
- SENS will appear in the left display. Refer to "Full Pot Programming", Steps 6 - 10 to program individual product buttons

12.2. BOIL FEATURE

- Before switching the fryer(s) ON, close the frypot drain valve(s). Fill empty frypot with mixture of cold water and FRYMASTER FRYER 'N' GRIDDLE cleaner. Follow instructions when mixing.

NOTE: BOIL MODE WILL NOT TURN ON BOTH SIDES OF COMPUTER. EACH SIDE WILL HAVE TO BE TURNED ON SEPARATELY.

- To program computer for Boil Feature, press either switch.
- Press the switch. CODE will appear in the left display.
- Enter 1, 6, 5, 3 in that sequence. The right display will read BOIL. The temperature is automatically set for a temperature of 195°F (91°C). The fryer will attain this proper boil temperature and remain there until either switch is pressed which cancels the boil-out mode. In high-altitude locations, constantly monitor the fryer for over-boil conditions. If over-boil occurs, turn off fryer immediately, allow to cool, and re-enter boil-out mode to continue the boil-out operation.

12.3. FRYER RECOVERY TIME CHECK

Recovery Time - An acceptable recovery time is 100 seconds or less.

- To check recovery time, press the switch. CODE will appear in the left display.

- Enter 1, 6, 5, 2 in that sequence. The recovery time will appear in both displays for 5 seconds.

12.4. TEMPERATURE SELECTION -- FAHRENHEIT TO CELSIUS

- To change the computer temperature from Fahrenheit to Celsius or Celsius to Fahrenheit, press either switch.
- Press the switch. CODE will appear in the left display.
- Enter 1, 6, 5, 8 in that sequence. The computer will automatically convert the temperature from Fahrenheit to Celsius or Celsius to Fahrenheit.
- Press the switch to display the temperature in the newly selected mode.

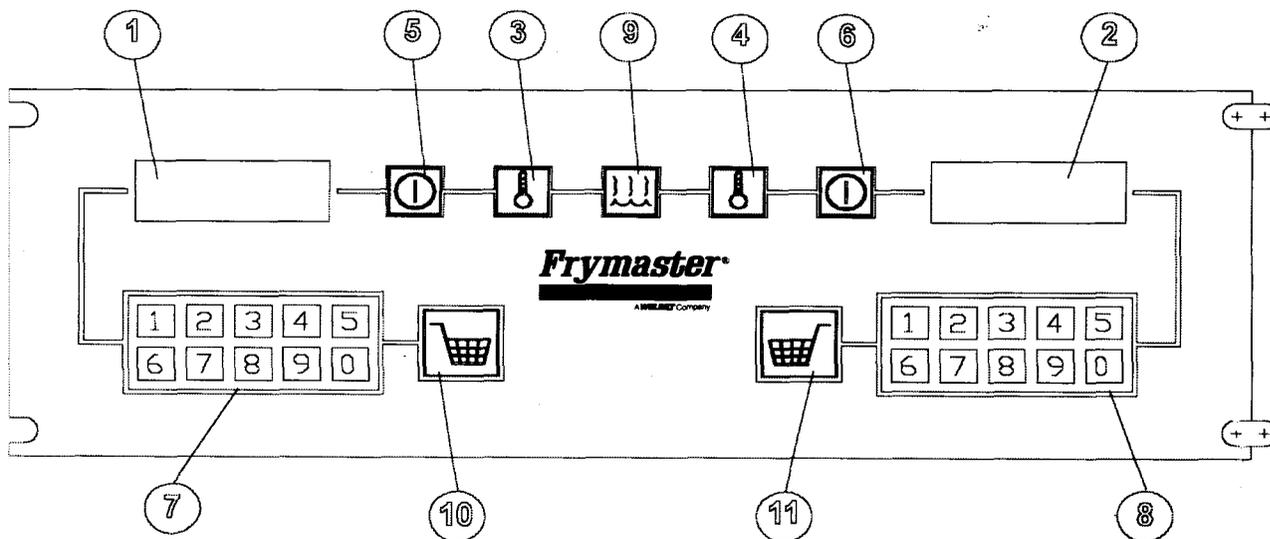
12.5. CONSTANT OIL TEMPERATURE DISPLAY MODE

- To program constant temperature display, press the switch.
- Press the switch. CODE will appear in the left display.
- Enter 1, 6, 5, L in that sequence. The cooking oil/shortening temperature will display constantly in the right display on a full pot and in both displays on a split pot.

NOTE: During the product cooking process the cooking time will not be displayed, but timing will be taking place.

- To remove the constant oil-temperature display and display the cooking time, repeat Steps 2 and 3.

13. TIMER CONTROL PANEL



ITEM NO

1. Lighted Display - left side display of various functions and operations.
2. Lighted Display - right side display of various functions and operations
3. Temperature Check Switch - controls left side of split pot. Press once for set point. Press again to return to cook time. (Full pot will display in Item 2.)
4. Temperature Check Switch - controls right side of split pot. Press once for set point. Press again to return to cook time. (Full pot will display in Item 2.)
5. On/Off Switch - controls power supply for left side of split pot and for full pot.
6. On/Off Switch - controls power supply for right side of split pot and for full pot.
7. Cook Time and Temperature Set Switches - controls left side of full or split pot.
8. Cook Time and Temperature Set Switches - controls right side of full or split pot.
9. Boil Mode Switch - controls boil mode.
10. Left Basket Lift Switch - controls left basket lift and cancels alarm.
11. Right Basket Lift Switch - controls right basket lift and cancels alarm.

CAUTION: FRYER MUST BE FILLED WITH OIL, SHORTENING, OR WATER BEFORE TURNING ON CONTROLLER.

13.1. TIMER CONTROLLER OPERATING INSTRUCTIONS

13.1.a. TURNING THE UNIT ON

SPLIT POT:

Left side press ON/OFF switch, Item 5.
Right side press ON/OFF switch, Item 6.

FULL POT:

Press ON/OFF switch, Item 5 or 6.

13.1.b. ADJUSTING THE TEMPERATURE

SPLIT POT:

Left side - press TEMPERATURE CHECK SWITCH, Item 3. Current set point is displayed in Item 1. To change set point, enter new temperature with numbered keys, Item 7. Press TEMPERATURE CHECK SWITCH, Item 3 or 4, to lock in set point. If you do not need to change setting, return to cook time by pressing Item 3 or 4.

Right side - follow left side procedure using right side controls, Items 4, 2, 8.

FULL POT:

Press TEMPERATURE CHECK SWITCH, Item 3 or 4. Current set point is displayed in right display. To change set point, enter new temperature with numbered keys, Item 8. Press TEMPERATURE CHECK SWITCH, Item 3 or 4, to lock in set point. If you do not need to change setting, return to cook time by pressing Item 3 or 4.

13.1.c. ADJUSTING THE TIMERS

The Electronic Timer Controller is always ready to time the cook operation for the time displayed in Items 1 and 2. You may change the time using the following procedure:

Left Basket Timer - enter new time with number keys, Item 7.

Right Basket Timer - enter new time with number keys, Item 8.

13.1.d. COOKING INSTRUCTIONS

Press LEFT BASKET LIFT SWITCH, Item 10 or RIGHT BASKET LIFT SWITCH, Item 11 to initiate a timed cook cycle. The corresponding displayed time now counts down. At time-out, the basket lift removes the product from the cooking oil/shortening. An audio alarm alerts the operator that cooking is completed, and the display area shows COOC.

Press the LEFT BASKET LIFT SWITCH, Item 10, or RIGHT BASKET LIFT SWITCH, Item 11, to cancel the alarm.

13.1.e. BOIL-MODE OPERATION

Press BOIL-MODE SWITCH, Item 9, to reset the timer to 195°F (91°C). The fryer will now maintain 195°F (91°C) until either On/Off switch is pressed, at which time the controller will return to the previously set value.

13.1.f. MELT-CYCLE OPERATION

The fryer automatically goes into melt cycle if cooking oil/shortening temperature is under 180°F (82°C). To override melt cycle, press RIGHT BASKET LIFT SWITCH, Item 11. For Split Pot, press BASKET LIFT SWITCH, Item 10 or 11 corresponding to pot being used.

13.1.g. ADDITIONAL INSTRUCTIONS

The controller automatically selects Fahrenheit/Celsius temperature values. Temperature values less than 190°F are considered Celsius values.

The Electronic Timer Controller stores the current time and temperature settings when the unit is turned off with the On/Off switches, Items 5 and 6. However, in the event of power failure, recheck time and temperature setting.

13.1.h. FRYER ALARMS

The Electronic Controller Timer will display the following:

Heat Failure Alarm "**HELP**": displayed continuously indicates that there has been a heating failure. High Temperature Alarm Hot: displays if the frypot temperature is above 385°F (196°C). Defective Probe Alarm "**Prob**": indicates the probe is defective.

14.TROUBLESHOOTING GUIDE

Directions for Troubleshooting Flow Chart

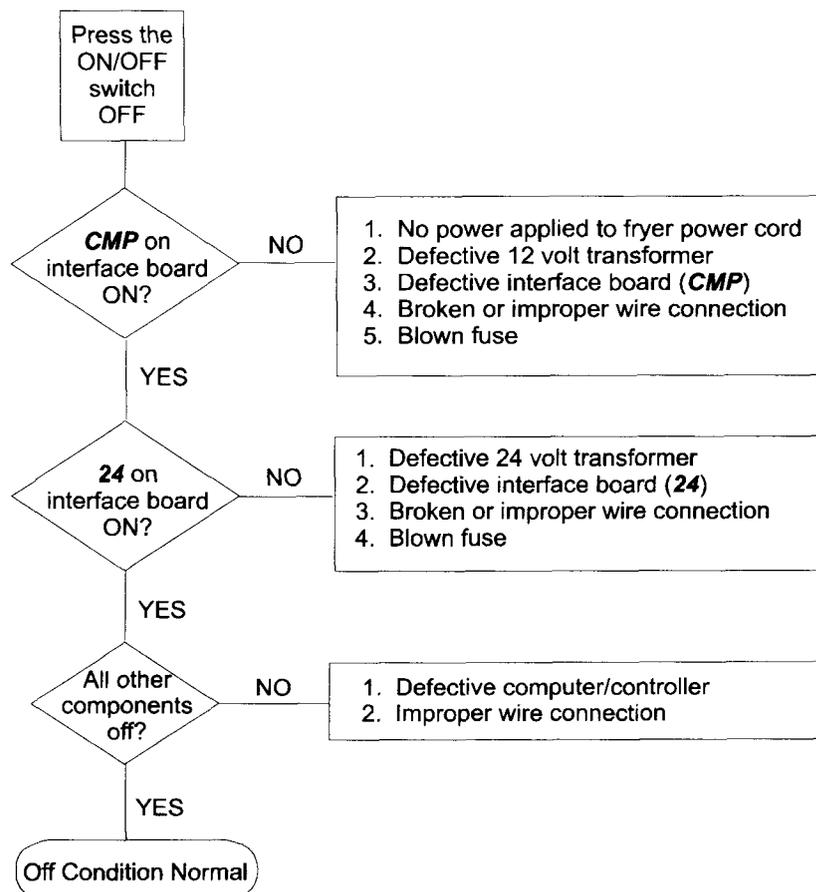
1. Perform the test set-up at the beginning of each condition.
2. **Normal operation** ("yes" after each decision block) flows down the page in sequence.
3. **Abnormal operation** (a "no" answer) branches to the right side of the page where you will find the steps for problem resolution.

Always start at the first condition and follow each step *in sequence*.

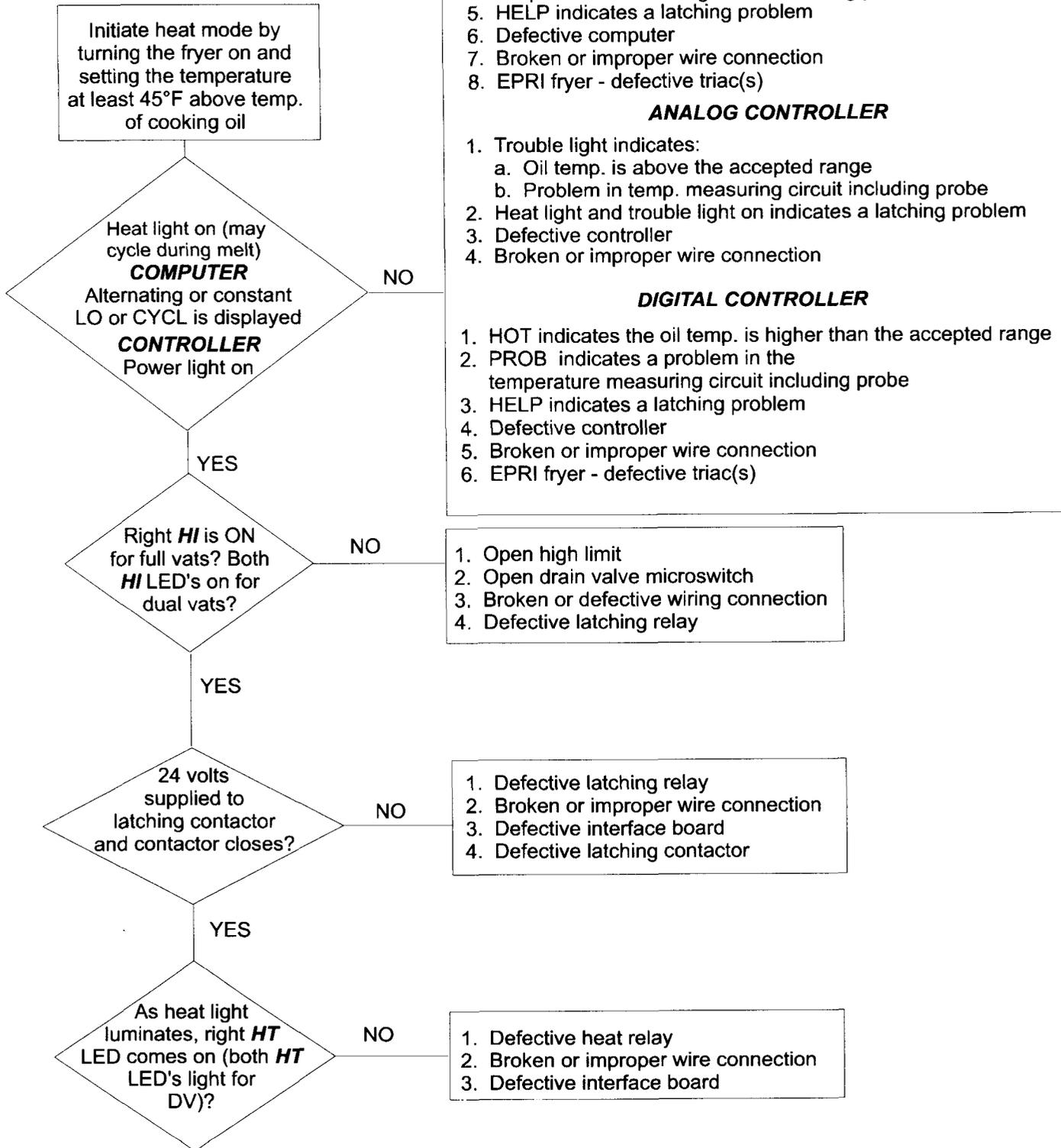
WARNING: Inspection, testing and repair of electrical equipment should be performed by qualified service personnel. Unplug the unit before servicing, except when electrical tests are required.

DANGER: Use extreme care during electrical circuit tests. Live circuits will be exposed.

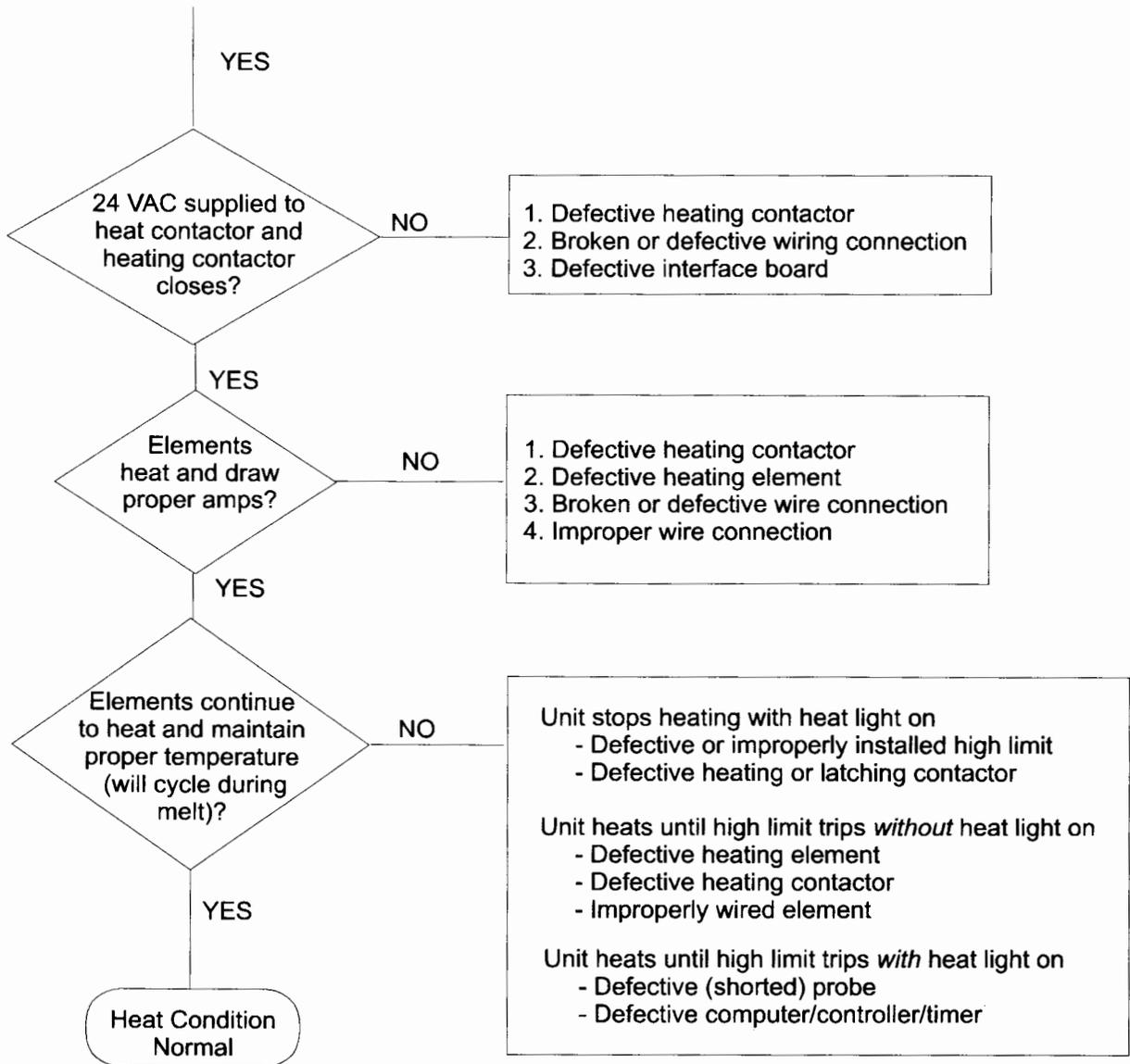
Off Condition



Heat Condition



continued



15. PREVENTIVE MAINTENANCE

1. CLEAN INSIDE AND OUTSIDE OF FRYER CABINET - DAILY

Clean inside the fryer cabinet, with a dry, clean cloth. Wipe all accessible metal surfaces and components to remove accumulated oil/shortening and dust.

Clean outside the fryer cabinet, with a clean, damp cloth soaked with dishwashing detergent. Wipe with a clean, damp cloth.

2. CLEAN FRYPOT AND HEATING ELEMENTS - ONCE A WEEK

CAUTION: NEVER operate the fryer(s) with an empty frypot.

BOILING OUT THE FRYPOT:

Clean frypot(s) as follows before filling with cooking oil/shortening:

1. Before switching the fryer(s) ON, close the frypot drain valve(s), fill empty frypot with mixture of cold water and *Frymaster Fryer 'N' Griddle Cleaner*. Follow instructions on bottle when mixing.
2. Press fryer ON/OFF switch to the ON position, and melt switch to OFF on solid-state thermostat controller.
3. Set thermostat knob or digital controller to 200°F (93°C) or program computer for *Boil Operation* as outlined in *Programming Instructions*.
4. Simmer the solution for 45 minutes to one hour. Do not allow water level to drop below the bottom oil-level line in frypot during boil-out operation.

CAUTION: Do not leave fryer unattended. The boil-out solution may foam and overflow if fryer is left unattended. Press ON/OFF switch to the OFF position to control this condition.

5. Turn the fryer controller/computer ON/OFF switch(es) to the OFF position.
6. Add 2 gallons of water. Drain out the solution and clean the frypot(s) thoroughly.
7. Refill the frypot(s) with clean water. Rinse the frypot(s) twice, drain and wipe down with a clean, dish towel. Thoroughly remove all signs of water from the frypot and elements before filling the frypot with cooking oil/shortening.

3. CLEAN DETACHABLE PARTS AND ACCESSORIES - ONCE A WEEK

Wipe all detachable parts and accessories with a clean, dry cloth. Use a clean cloth saturated with Frymaster Fryer 'N' Griddle Cleaner to remove accumulated carbonized oil/shortening on detachable parts and accessories. Rinse the parts and accessories thoroughly with clean water and wipe dry before reinstalling.

4. CHECK CALIBRATION OF FRYER WITH ANALOG CONTROLLER - ONCE A MONTH

After the cooking oil/shortening has operating temperature, let the heating elements cycle at least 4 times, then insert a good thermometer or pyrometer near the temperature sensing probe approximately 3 inches (7.5mm) deep into the cooking oil/shortening. When the heating elements just cycle on after the fourth time, the thermometer should be within $\pm 5^{\circ}\text{F}$ ($\pm 2^{\circ}\text{C}$) of the thermostat knob setting or computer programmed temperature. See the applicable calibration section of the controlling device that you are using.

16. FILTRATION

OPERATING INSTRUCTIONS

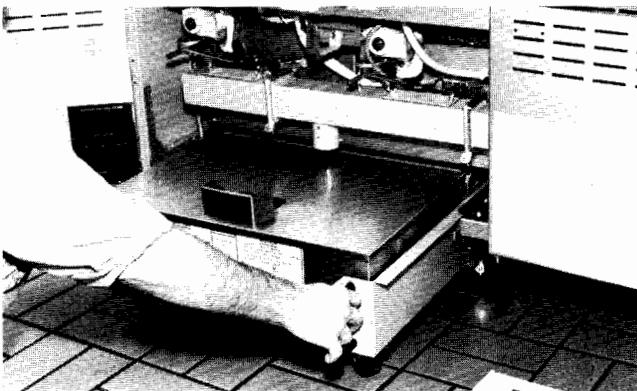
CAUTION:

Extreme care must be exercised when working with hot cooking oil/shortening. Allow the filter pan to completely cool before attempting to change the filter paper.

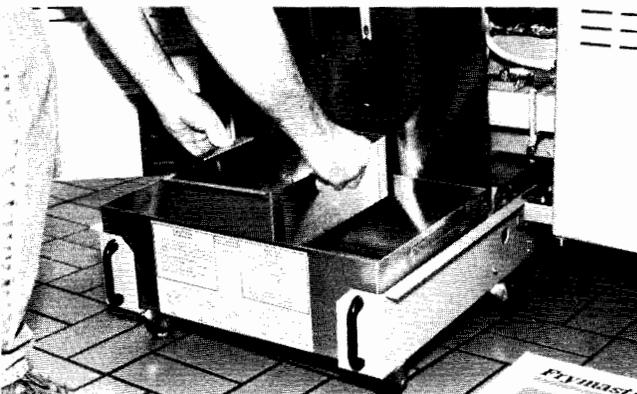
Preparing the Filter Unit for Use



1. Turn the fryer OFF.

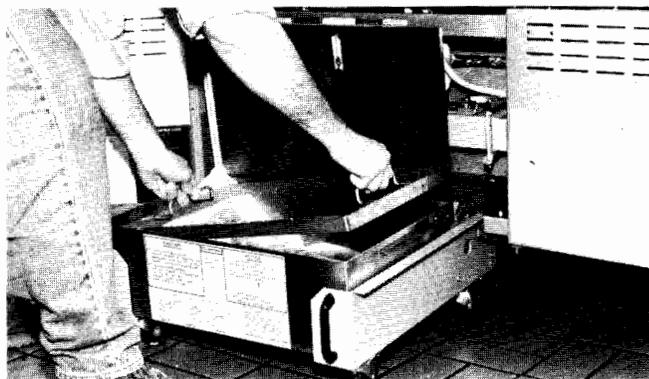


2. *Footprint III* - Pull the filter carriage forward.
Filter Magic II - Remove the filter unit from the cabinet.

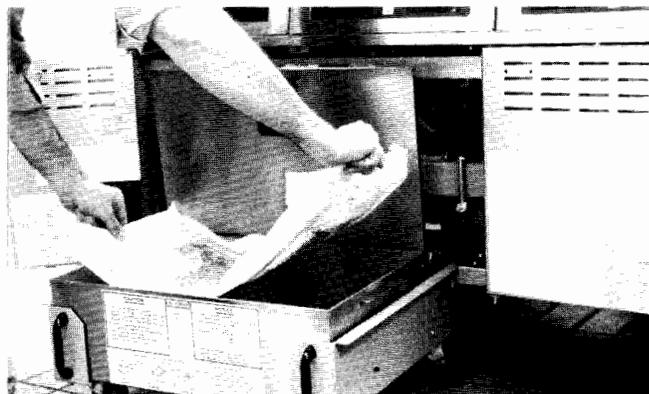


3. *Footprint III* - Lift the cover, remove the crumb tray and clean.

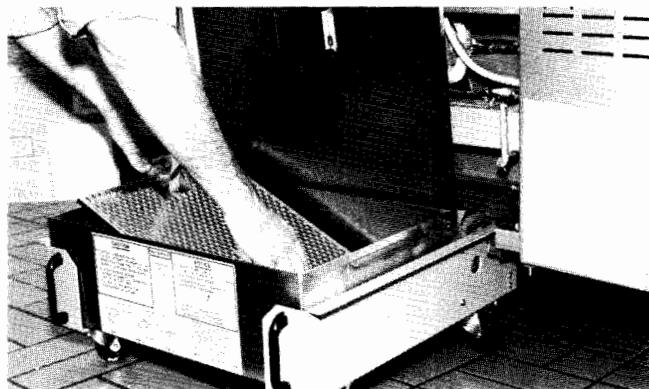
Filter Magic II - Remove the crumb tray and clean.



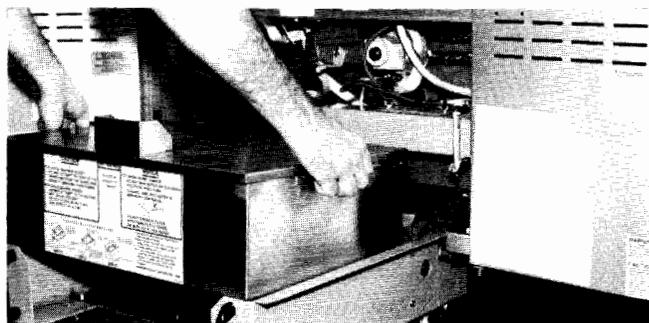
4. Remove the paper hold-down ring and clean.



5. Remove the dirty paper and discard.

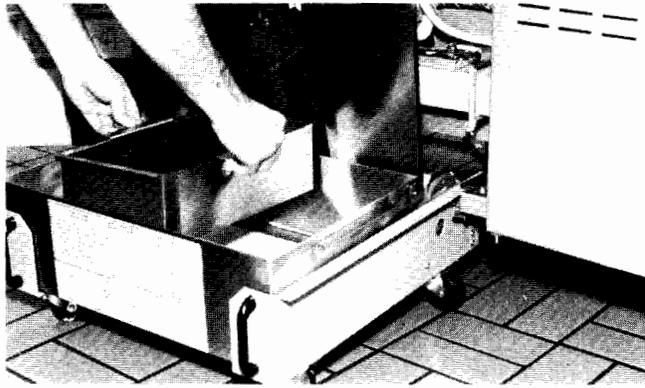
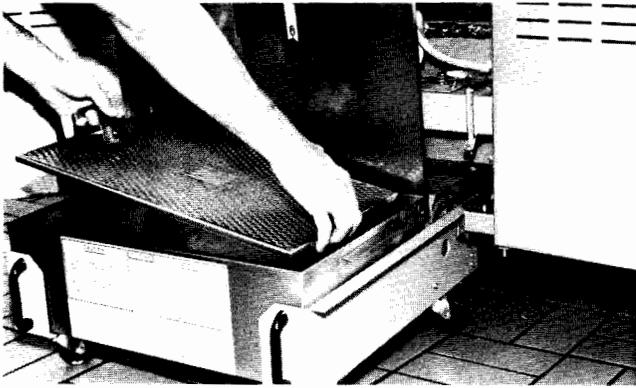


6. Remove the screen and clean.

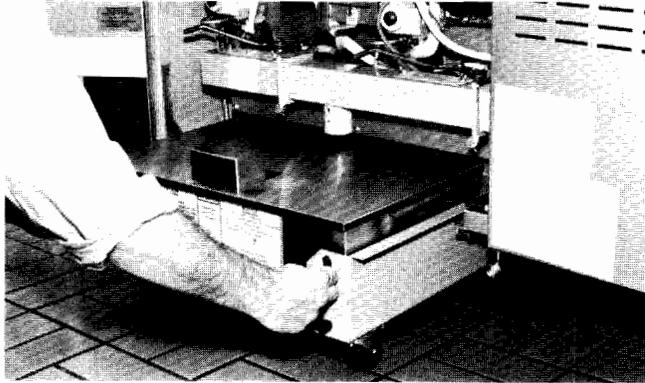


7. Remove the filter/inner pan and clean (may be washed with hot water). Dry thoroughly then reinstall.

CAUTION: Never attempt to remove a filter pan containing hot cooking oil/shortening. Hot oil/shortening will flow through the outlet in the bottom of the pan and cause severe burns to feet and legs.



8. Install the screen.



11. Place the crumb tray in the filter pan.



12. *Footprint III* - Close cover and push filter carriage inside the fryer.

9. Position the paper on top of the pan with the edges evenly overlapping. Use the hold-down ring to push the paper to the bottom of the pan. Push down firmly to properly seat the paper.

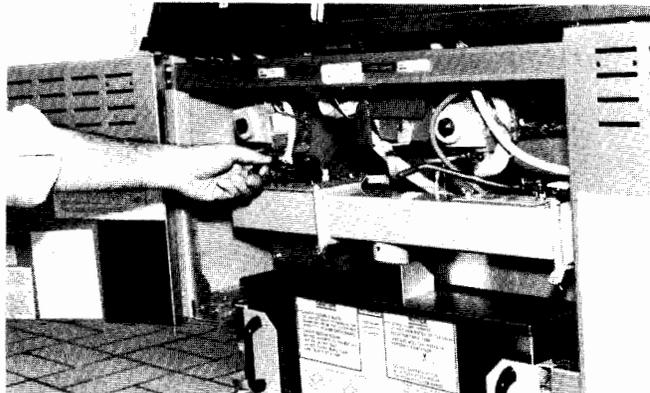
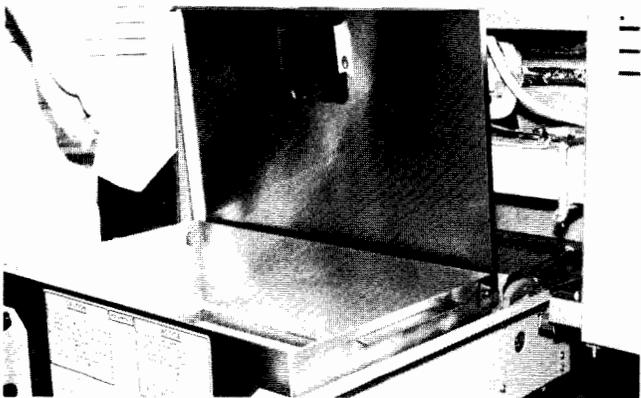
Filter Magic II - Roll filter assembly back into the fryer cabinet all the way. When the filter assembly is properly positioned, the green SYSTEM READY light located on the filter control panel will come on.

OPERATION OF THE FILTER UNIT:

NOTE: The filter paper is larger than the filter pan to create a better seal. Do not use filter paper that is shorter or narrower than the filter support screen. This could cause damage to the filter pump. Never filter without paper. This will damage the pump and motor.

CAUTION: Never operate the filter unit unless the cooking oil/shortening in the fryers has been brought up to cooking temperature.

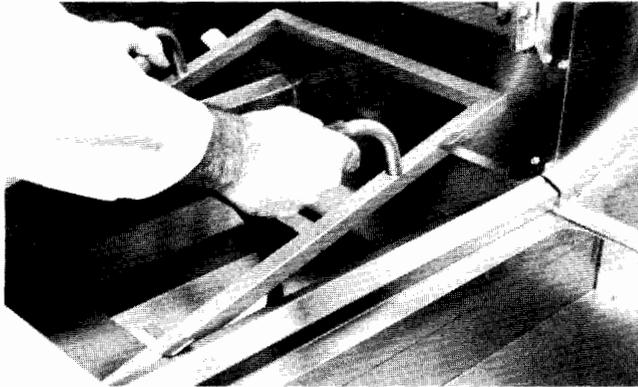
NOTE: Skim large particles from shortening/oil before draining.



10. Sprinkle filter powder on top of the paper according to the instructions on the package.

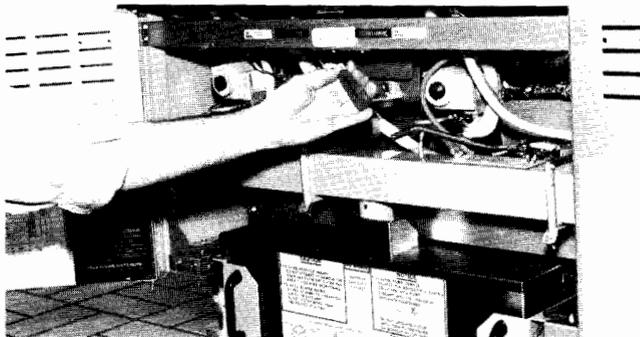
13. Open the drain valve to the frypot you want to filter. The cooking oil/shortening will transfer from the frypot to the filter pan. If necessary, use the Fryer's Friend steel rod to clear the drain from the inside of the frypot.

NOTE: Exercise care when using the Fryer's Friend to prevent damage to the frypot and the drain valve. Do not drain more than one frypot at a time. To do so will cause overfilling of the filter pan.

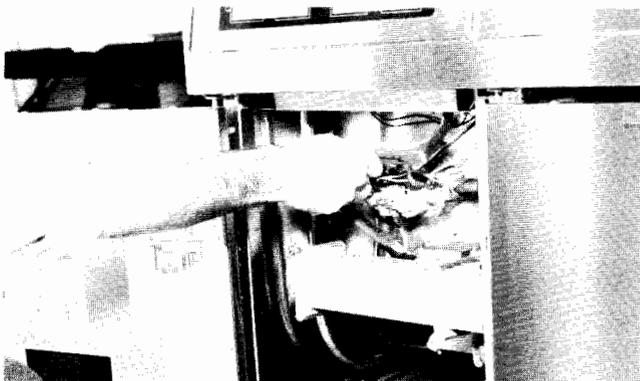


14. Snap the power shower into the frypot connection.

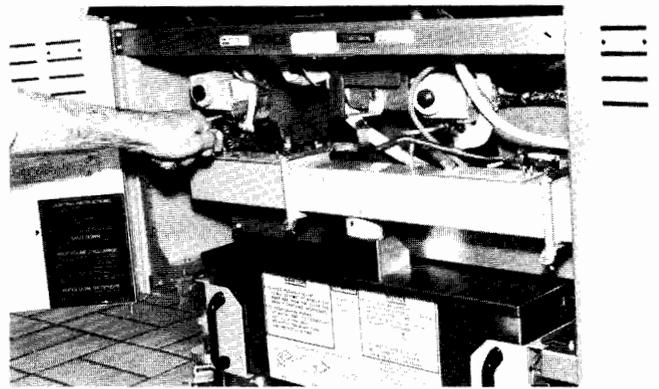
WARNING: Except when using the rear flush option, do not operate without power shower. Hot cooking oil/shortening can splash and cause injury.



15. For fryers with rear flush option, engage the control lever to select rear flush. This will wash sediment from the bottom of the frypot.



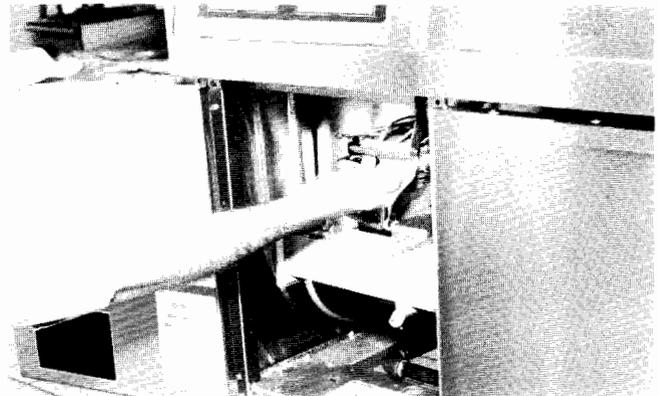
16. Push the filter handle to start the filter pump. **NOTE:** There may be a 5 second delay before the pump activates.



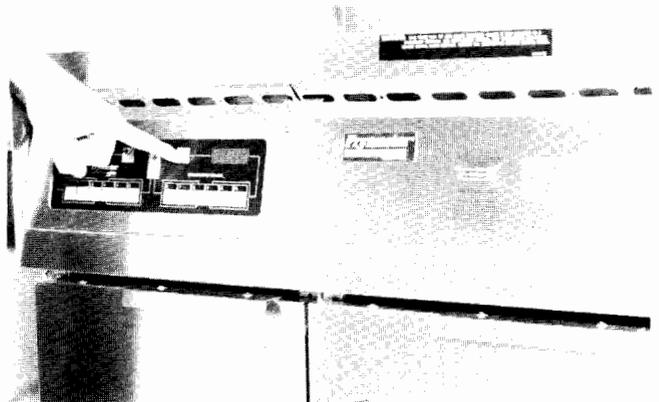
17. When the oil/shortening and frypot are clean, close the drain valve to refill the frypot. Allow the filter pump to run 10 to 12 seconds after bubbles appear in the oil/shortening to clear the oil return lines and to prevent hardening in the lines.

NOTE: Filter pump is equipped with a manual reset switch in case the filter motor overheats or an electrical fault occurs.

WARNING: Turn off power to the filter system and allow pump motor to cool 20 minutes before attempting to reset switch on the pump motor



18. Pull the filter handle to stop the filter pump. Remove the power shower.



19. Make sure the drain valve is fully closed. Turn the fryer ON and allow the cooking oil/shortening temperature to reach set point.

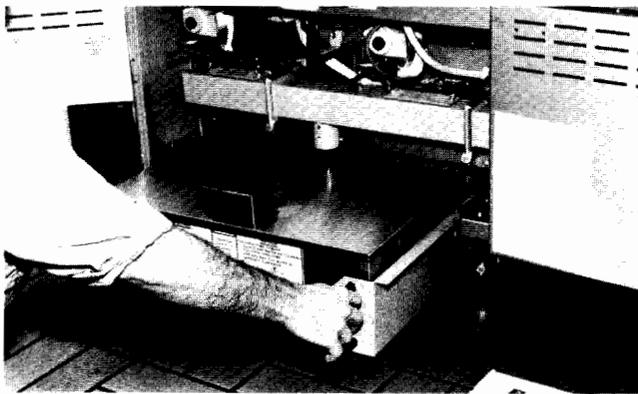
17. CARE AND CLEANING OF YOUR FILTER SYSTEM

CAUTION: Never operate the filter system without cooking oil/shortening in the system.

WARNING: NEVER use the filter pan to dispose or transport old cooking oil/shortening to the disposal area. ALWAYS allow cooking oil/shortening to cool below 100°F (38°C) before transporting to the disposal area. A Shortening Disposal Unit (SDU), available from your local distributor, is available and highly recommended for safety.

1. Do not drain water into the filter pan. Water will damage the filter pump. Perform the following to drain the frypot:

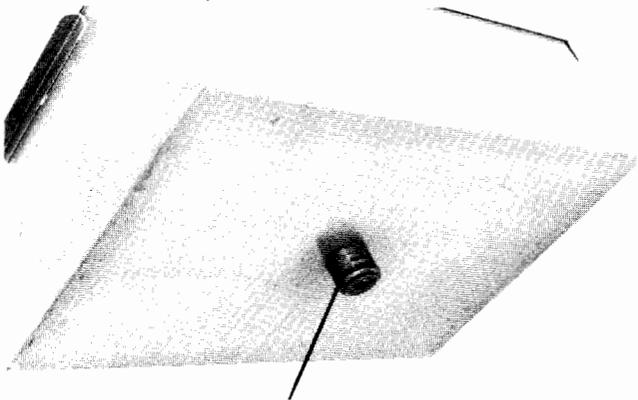
- a. *Footprint III*
- 1) Pull the filter carriage forward.
 - 2) Remove the empty filter pan assembly.
 - 3) Push the filter carriage back into the fryer.
 - 4) Place suitable container under the drain.
 - 5) Open the drain valve.



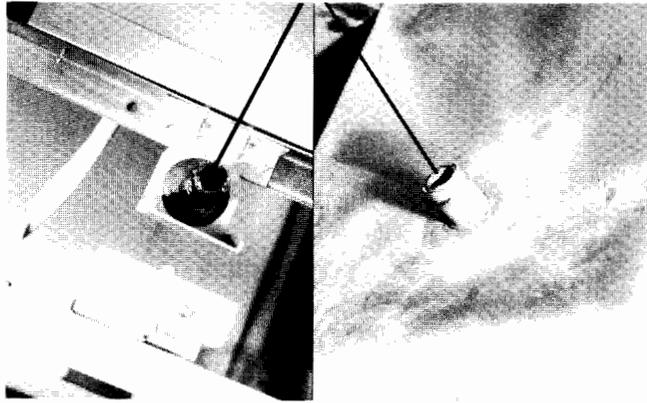
- b. *Filter Magic II*
- 1) Remove the filter unit from the cabinet.
 - 2) Place suitable container under the drain.
 - 3) Open the drain valve.

2. Replace o-ring(s) when the filter system pumps cooking oil/shortening slowly or not at all (with new filter paper).

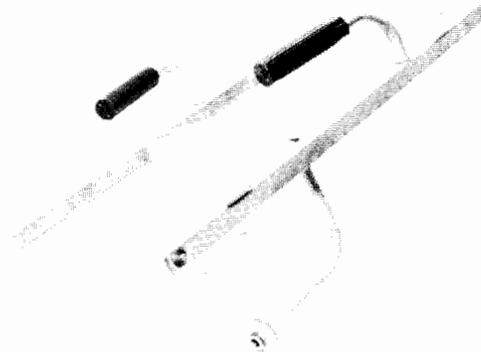
- a. *Footprint III* - the o-ring is on the bottom of the filter pan.



- b. *Filter Magic II* - o-rings are on bottom of pan and on the pump fitting.



3. Immediately after use, drain the power shower completely. If you suspect blockage, unscrew the plugs at each corner of the power shower frame. Use a long narrow bottle brush with hot water and detergent to clean the inside of the power shower. Rinse, dry thoroughly, and reinsert plugs before using.



4. *Filter Magic II* - Periodically clean outer filter pan as follows:

- a. Pour 1 quart (1 liter) of warm water mixed with grease-cutting detergent into the pan. Scrub the pan thoroughly **INSIDE ONLY** with the pot brush until clean.
- b. Pour the solution from the outer pan into the kitchen drain or sink.
- c. Rinse with clean water and drain into kitchen drain or sink.
- d. Turn the pan upside down and slightly elevate on sink drain board to **allow all water to drain from suction tube.**
- e. Wipe inside and outside with a clean, dry cloth or paper towels.

18. BUILT-IN FILTER SYSTEM TROUBLESHOOTING GUIDE

Directions for Troubleshooting Flow Chart

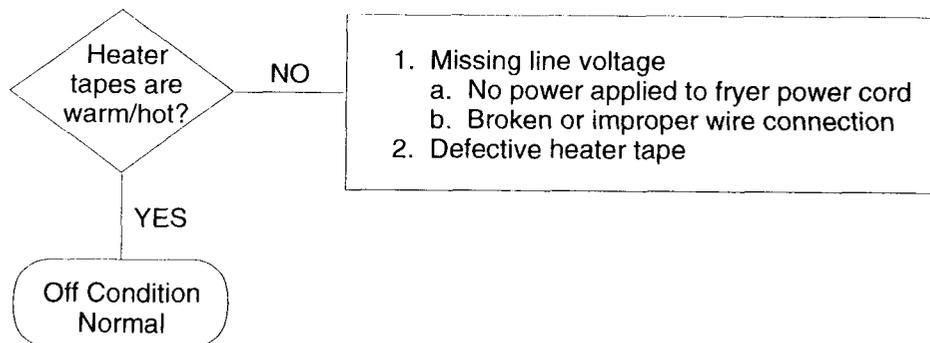
1. Perform the test set-up at the beginning of each condition.
2. **Normal operation** ("yes" after each decision block) flows down the page in sequence.
3. **Abnormal operation** (a "no" answer) branches to the right side of the page where you will find the steps for problem resolution.

Always start at the first condition and follow each step *in sequence*.

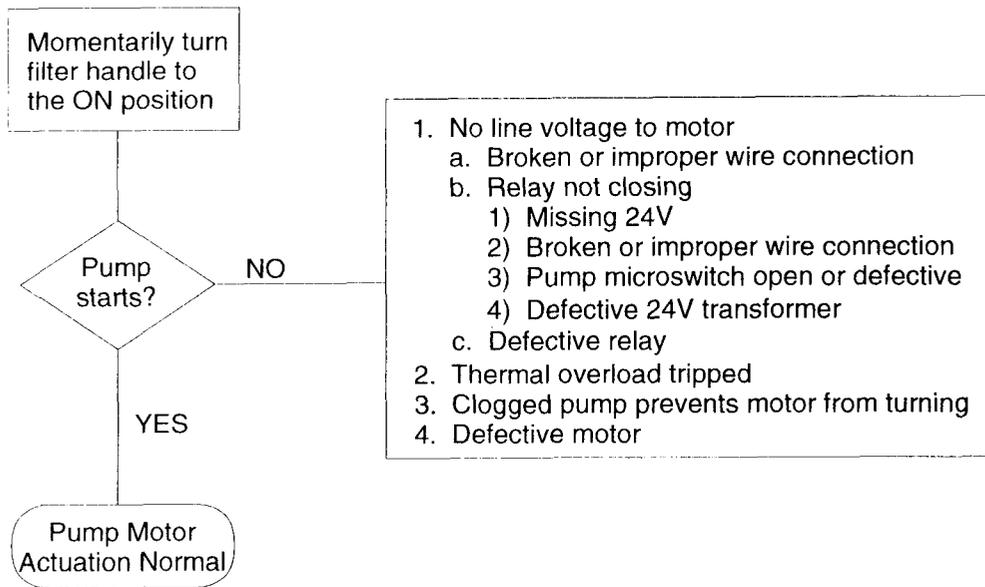
WARNING: Inspection, testing and repair of electrical equipment should be performed by qualified service personnel. Unplug the unit before servicing, except when electrical tests are required.

DANGER: Use extreme care during electrical circuit tests. Live circuits will be exposed.

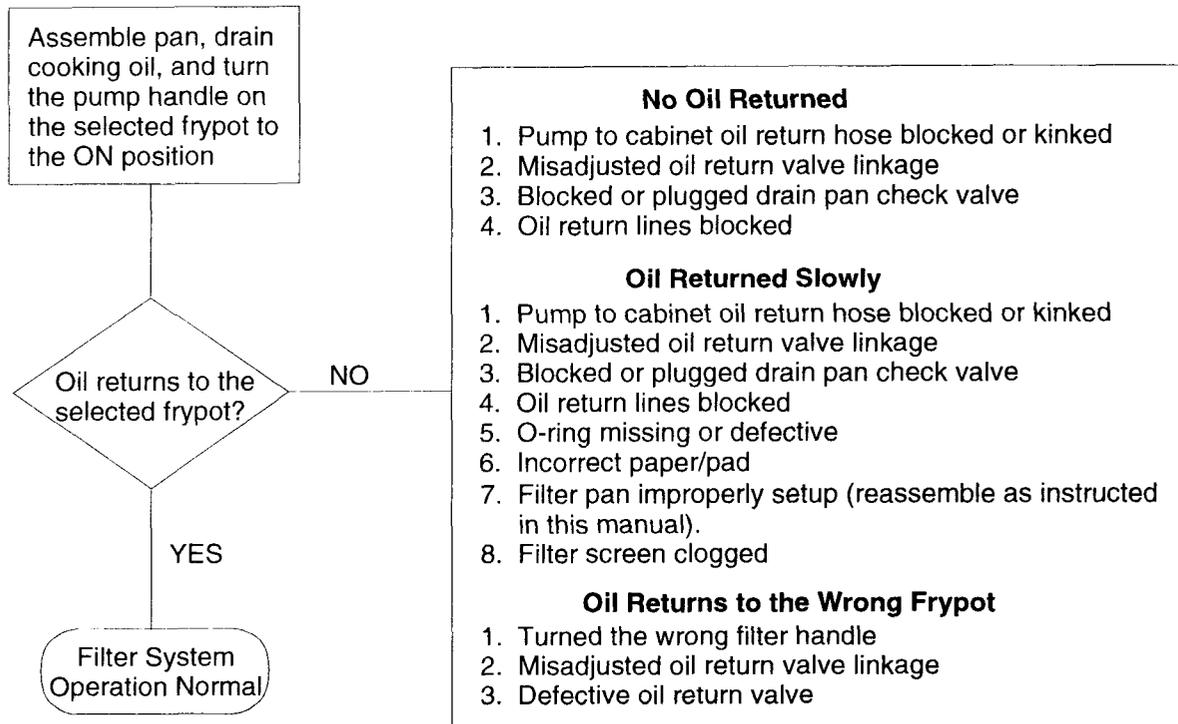
Off Condition



Pump Motor Actuation



Filter System Operation



19. BASKET LIFTS

INSTALLATION INSTRUCTIONS

For convenience in shipping your fryer, the basket hanger assemblies are shipped in the down position. Before starting your fryer, install the basket lift arms. For fryers equipped with computers or basket lift timers, basket lift rods will come up automatically when unit is plugged into electrical outlet.

After the fryer has reached the programmed cooking temperature, press the desired product button(s) on the computer or basket lift timer controller. The basket(s) will be lowered into the cooking oil/shortening. At the completion of the timed cycle, the baskets will automatically be raised. To repeat the cycle, simply depress the desired product button to lower the baskets.

OPERATING INSTRUCTIONS

Fryers Equipped with Computers or Basket Lift Timer Controllers:

To change the time cycle on fryers equipped with Computer or Basket Lift Timer Controller, refer to the *Computer Programming* Section or the *Timer Control Panel* Section of this manual.

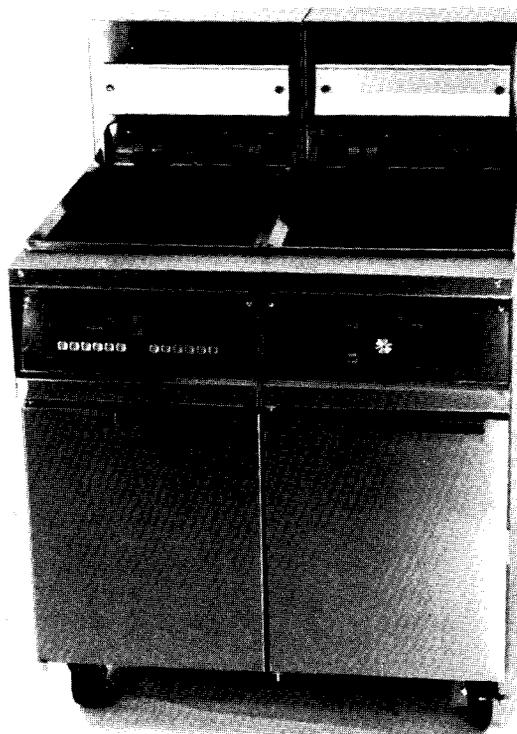
PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
BASKET LIFT TIMER OR COMPUTER WILL NOT ACTIVATE GEARMOTOR	A. Loose or broken wire between interface board and gearmotor. B. Loose or broken wire connections at basket lift timer or computer. C. Wire loose in disconnect plug at rear of interface board or at basket lift. D. Defective basket lift timer or computer. E. Trace on interface board burned open. F. Defective timer or computer.	A. Call Service Agent. B. Call Service Agent. C. Call Service Agent. D. Replace timer or computer. E. Call Service Agent. F. Replace timer or computer.
POWER TO GEARMOTOR BUT GEARMOTOR DOES NOT MOVE	A. Defective gearmotor. B. Basket lift rod jammed in rod bushings.	A. Call Service Agent. B. Call Service Agent.
BASKET LIFT RODS BINDING	A. Rod bushings need lubrication.	A. Grease basket lift rods and bushing with Lubriplate-type grease.
LIFTS BOUNCE UP AND DOWN WHEN IN THE UP POSITION	A. Defective motor brake.	A. Call Service Agent.
LIFT MOTOR CONTINUES TO RUN EVEN THOUGH THE BASKET IS EITHER COMPLETELY UP OR COMPLETELY DOWN	A. Microswitches are out of adjustment. B. Microswitch is broken. C. Defective basket lift relay on interface board.	A. Call Service Agent. B. Call Service Agent. C. Call Service Agent.
BASKET LIFT WILL ONLY WORK INTERMITTENTLY	A. Basket lift gearmotor is overheating. B. Loose or broken wire connections at interface board or at basket lift connection.	A. Call Service Agent. B. Call Service Agent.

SERVICE & OWNER'S MANUAL

ELECTRIC FRYERS

H14/H17/H22 Series

Including References for EPRI Fryers



Frymaster[®]

A **WELBIT** Company

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318-865-1711 FAX 318-862-2394

PRINTED IN THE UNITED STATES

SERVICE HOTLINE 1-800-551-8633

819-5626 11/97



FRYMASTER ELECTRIC FRYERS ARE MANUFACTURED FOR USE WITH THE TYPE VOLTAGE SPECIFIED ON THE FRYER RATING PLATE LOCATED ON THE FRYER DOOR. FOR PROPER INSTALLATION PROCEDURES IN THE UNITED STATES, REFER TO THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE ANSI/N.F.P.A. NO. 70; IN CANADA, CANADIAN ELECTRICAL CODE PART 1, CSA-22.1. INFORMATION ON THE CONSTRUCTION AND INSTALLATION OF VENTILATING HOODS MAY BE OBTAINED FROM THE LATEST EDITION OF THE "STANDARD FOR THE INSTALLATION OF EQUIPMENT FOR THE REMOVAL OF SMOKE AND GREASE LADEN VAPORS FROM COMMERCIAL COOKING EQUIPMENT, "N.F.P.A. NO. 96. COPIES OF THESE ELECTRICAL STANDARDS ARE AVAILABLE FOR THE NATIONAL FIRE PROTECTION ASSOCIATION, BATTERY MARCH PARK, QUINCY, MASS. 02269

WARNING

IN THE EVENT OF A POWER FAILURE, THE FRYER(S) WILL AUTOMATICALLY SHUT DOWN. SHOULD THIS OCCUR, TURN THE POWER SWITCH OFF. DO NOT ATTEMPT TO START THE FRYER(S) UNTIL POWER IS RESTORED.

THE FRYER(S) MUST BE INSTALLED WITH A SIX-INCH (15 cm) CLEARANCE AT BOTH SIDES AND ADJACENT TO COMBUSTIBLE CONSTRUCTION. A MINIMUM OF 24-INCHES (60 cm) SHOULD BE PROVIDED AT THE FRONT OF THE FRYER(S) DOOR.

THIS MANUAL SHOULD BE KEPT IN A CONVENIENT LOCATION AND REFERRED TO WHEN ANY PROBLEM OCCURS AND FOR FUTURE REFERENCE.

FOR YOUR SAFETY, DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

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1. PARTS ORDERING/SERVICE INFORMATION

Parts orders must be placed directly with your local Frymaster Parts Distributor. A list of Frymaster Parts Distributors was included with the fryers when shipped from the factory. If you do not have access to this list, please contact the Frymaster Technical Services Department at 1-800-551-8633 or 1-318-865-1711.

To help speed your order, the following information is required:

Model Number: _____

Serial Number: _____

Type of Gas or Voltage: _____

Part Number: _____

Service information may be obtained by calling your local Factory Authorized Service Center. A list of these agencies was packed with your fryer.

Service information may also be obtained by calling the Frymaster Technical Services Department. When calling, please have the following information available:

Model Number: _____

Serial Number: _____

Type of Gas or Voltage: _____

Nature of Service Problem: _____

And other information that may be helpful in solving your service problem.

PARTS ORDERING/SERVICE INFORMATION
CANADA -- Garland Commercial Ranges, Ltd.,
1177 Kamato Road, Mississauga, Ontario
L4W1X4.

NOTE: RETAIN AND STORE THIS MANUAL IN
A SAFE PLACE FOR FUTURE USE.
ADDITIONAL COPIES MAY BE OBTAINED
FROM YOUR AUTHORIZED SERVICE CENTER.

2. IMPORTANT INFORMATION

2.1. Introduction

The H14, H17, H22 Series are deep-well, open pot fryers designed for cooking fried products. H14, H17, H22 models come in full or split, open-pot arrangements. Read the instructions in this manual thoroughly before attempting to install, operate or service this equipment.

2.2. Operating, Installation, and Service Personnel

Operating information for FRYMASTER equipment has been prepared for use by qualified and/or authorized operating personnel only.

All installation and service on FRYMASTER equipment must be performed by qualified, certified, licensed, and/or authorized installation or service personnel.

Service may be obtained by contacting your local Factory Authorized Service Center.

2.3. Definitions

Qualified and/or Authorized Operating Personnel

Qualified or authorized operating personnel are those who have carefully read the information in this manual and have familiarized themselves with the equipment functions or have had previous experience with the operation of equipment covered in this manual.

Qualified Installation Personnel

Qualified installation personnel are: individuals, a firm, corporation, or a company which either in person or through a representative are engaged in, and are responsible for the installation of electrical wiring from the building electric meter, main control box, or service outlet to the electrical appliance. Qualified installation personnel must be experienced in such work, be familiar with all electrical precautions required, and have complied with all requirements of applicable national, European Community and local codes.

Qualified Service Personnel

Qualified service personnel are those familiar with FRYMASTER equipment and have been

authorized by THE FRYMASTER CORPORATION. All authorized service personnel are required to be equipped with a complete set of service parts manuals and stock a minimum amount of parts for FRYMASTER equipment.

A list of Frymaster Factory Authorized Service Centers was included with the fryer when shipped from the factory. If you do not have access to this list, please contact the Frymaster Customer Service Department, using the number listed on the front of this manual. Failure to use qualified service personnel will void the Frymaster warranty.

2.4. Shipping Damage Claim Procedure

Please note that the FRYMASTER equipment was carefully inspected and packed by skilled personnel before leaving the factory. The transportation company assumes full responsibility for safe delivery upon acceptance of the equipment.

What to do if equipment arrives damaged:

1. File Claim for Damages Immediately--Regardless of extent of damage.
2. Visible Loss or Damage--Be sure this is noted on the freight bill or express receipt and is signed by the person making the delivery.
3. Concealed Loss or Damage--If damage is unnoticed until equipment is unpacked, notify freight company or carrier immediately and file a concealed damage claim. This should be done within 15 days of date of delivery. Be sure to retain container for inspection.

FRYMASTER DOES NOT ASSUME RESPONSIBILITY FOR DAMAGE OR LOSS INCURRED IN TRANSIT

3. INSTALLATION INSTRUCTIONS

PROPER INSTALLATION IS ESSENTIAL TO EFFICIENT TROUBLE-FREE OPERATION. ANY ALTERATION OF THE EQUIPMENT VOIDS THE FRYMASTER WARRANTY.

Before installing the newly-arrived equipment, inspect it carefully for visible and concealed damage. See *Shipping Damage Claim Procedure*, Section 2.4.

3.1. CASTER/LEG INFORMATION

If it is necessary to install caster/legs, use the instructions provided in the accessories package shipped with the fryer.

CAUTION: If you need to relocate a fryer installed with legs, remove all the weight from each leg before moving. If a leg becomes damaged, contact your service agent for immediate repair or replacement.

4. ELECTRICAL SERVICE CONNECTIONS

Electric fryers may have the power cord installed at the factory. In the event the power cord need be installed, refer to the label affixed to the rear of the fryer for specific wiring information.

Connections should be made by means of an approved, flexible-metallic or rubber-covered electrical cable and quick-disconnect plug. This connection should be made to the fryer power input terminal block. The terminal block is located in the component box in the bottom of the fryer. **CONNECTIONS MUST BE MADE BY QUALIFIED PERSONNEL ONLY AND MEET NATIONAL AND LOCAL CODES**

CAUTION: The fryer(s) **MUST** be connected to the voltage and phase as specified on the rating and serial number plate located on the fryer door. To determine the proper wire size and amperage service per fryer, use the chart on the next page.

CAUTION: A ground wire **MUST** be connected to the **GROUND** terminal provided near the input power terminal block.

CAUTION: Note the following before connecting the fryer to an emergency cutoff system:

- Be sure that each fryer is connected to a dedicated set of contacts in the emergency cutoff system.
- Do not attempt to connect the contacts in series.
- Do not connect more than one fryer to each set of contacts.
- The contacts **MUST BE** normally closed contacts that open during the emergency.
- The contacts **CANNOT** have an external voltage applied.

5. POWER REQUIREMENTS

WARNING:

For power supply connection, use copper wire ONLY, suitable for at least 167°F(75°C).

MODEL	VOLTAGE	PHASE	WIRE SERVICE	MIN. SIZE	AWG (mm ²)	AMPS PER LEG		
						L1	L2	L3
H14	208	3	3	6	(16)	39	39	39
H14	240	3	3	6	(16)	34	34	34
H14	480	3	3	8	(10)	17	17	17
H14	220/380	3	4	6	(16)	21	21	21
H14	240/415	3	4	6	(16)	20	20	21
H14	230/400	3	4	6	(16)	21	21	21
ALL	208	3	3	6	(16)	39	39	39
EPH14	240	3	3	6	(16)	34	34	34
SERIES	220/380	3	4	6	(16)	21	21	21
(EPRI)	240/415	3	4	6	(16)	20	20	20
H17	208	3	3	6	(16)	48	48	48
H17	240	3	3	6	(16)	41	41	41
H17	480	3	3	6	(16)	21	21	21
H17	220/380	3	4	6	(16)	26	26	26
H17	240/415	3	4	6	(16)	24	24	24
H17	230/400	3	4	6	(16)	25	25	25
ALL	208	3	3	6	(16)	48	48	48
EPH17	240	3	3	6	(16)	41	41	41
SERIES	220/380	3	4	6	(16)	26	26	26
(EPRI)	240/415	3	4	6	(16)	24	24	24
H22	208	3	3	4	(25)	61	61	61
H22	240	3	3	4	(25)	53	53	53
H22	480	3	3	6	(16)	27	27	27
H22	220/380	3	4	6	(16)	34	34	34
H22	240/415	3	4	6	(16)	31	31	31
H22	230/400	3	4	6	(16)	32	32	32

The electrical power supply for the fryers **MUST** be the same as indicated on the rating and serial number plate located on the fryer door.

6. OPERATING INSTRUCTIONS

6.1. AFTER FRYER(S) HAVE BEEN INSTALLED AT FRYING STATION:

1. To level fryers equipped with legs, the bottom of the legs can be screwed out approximately one inch for leveling. Legs should be adjusted so that the fryer(s) are at the proper height in the frying station.

For fryers equipped with casters, there are no built-in leveling devices. The floor where the fryers are installed must be level.

NOTE: If you need to relocate a fryer installed with legs, remove all the weight from each leg before moving. If a leg becomes damaged, contact your service agent for immediate repair or replacement.

2. Close fryer drain valve(s) and fill frypot with water to the bottom oil level line.
3. Boil out frypot(s). See *Boil-Out* instructions this page.
4. Drain, clean, and fill frypot(s) with cooking oil. See *Filling With Shortening*.
5. Check thermostat calibration on fryers with solid-state controller. See Section 16 on Page 25.

6.2. BOILING OUT THE FRYPOT:

Clean frypot(s) as follows before filling with cooking oil/shortening for the first time and at least once a month thereafter:

1. Before switching the fryer(s) ON, close the frypot drain valve(s), fill empty frypot with mixture of cold water and Frymaster Fryer 'N' Griddle Cleaner. Follow instructions on bottle when mixing.
2. Press fryer ON/OFF switch to the ON position. Set the melt switch to OFF if your fryer is equipped with an analog controller.
3. Set thermostat knob or digital controller to 200°F (93°C) or program computer for Boil Operation as outlined in Programming Instructions.

4. Simmer the solution for 45 minutes to one hour. Do not allow water level to drop below the bottom oil-level line in frypot during boil-out operation.

CAUTION: Do not leave fryer unattended. The boil-out solution may foam and overflow if fryer is left unattended. Press ON/OFF switch to the OFF position to control this condition.

5. Turn the fryer ON/OFF switch(es) to the OFF position.
6. Add 2 gallons of water. Drain out the solution and clean the frypot(s) thoroughly.
7. Refill the frypot(s) with clean water. Rinse the frypot(s) twice, drain and wipe down with a clean, dish towel.

CAUTION: ALL DROPS OF WATER MUST BE REMOVED FROM FRYPOT BEFORE FILLING WITH COOKING OIL.

6.3. FILLING WITH COOKING OIL

Cooking oil/shortening capacity of H14, H17, H22 Series fryers is 50 lbs. (25 liters (cold 70°F)) for a full pot and 25 lbs. (12.50 liters (cold 70°F)) for each half of a split frypot.

6.3.a. Before filling the frypot(s) with cooking oil/shortening:

1. Close the frypot drain valve.
2. Place the power switch(es) to the OFF position.
3. Remove the basket support rack.
4. Fill the empty frypot(s) to the bottom oil-level line.
5. Replace the basket support rack on top of the heating element.

CAUTION: If you use solid shortening, pack the shortening tightly into the bottom of the frypot.

6. Place the ON/OFF switch to the ON position.

7. Set the controlling device (computer/controller) for normal cooking temperature. Be sure the controller is set to MELT CYCLE. The fryers will operate in the melt cycle mode until the shortening temperature reaches 180°F (82°C). The EPRI fryer with a digital controller will operate in a melt cycle mode until the shortening temperature reaches the set-point temperature.

6.4. BEFORE RELOCATING FRYER.....

WARNING:

Moving a fryer filled with hot cooking oil/shortening may cause splattering. Extreme care must be exercised. It is recommended that the operator or servicer follow the draining instructions of this manual before attempting to relocate the fryer.

If you need to relocate a fryer installed with legs, remove all the weight from each leg before moving. If a leg becomes damaged during movement, contact your service agent for immediate repair/replacement.

1. Turn off fryer controller/computer. Unplug the power cords from the source.
2. Relocate the fryer for service accessibility.
3. After servicing is complete, return the fryer to the operating position. Plug all power cords into source. Attach the restraining devices.

7. DRAINING AND MANUAL FILTERING INSTRUCTIONS

WARNING:

Use care when draining and filtering cooking oil/shortening to avoid serious burns.

7.1. FILTERING

If you are using a filter other than a Frymaster Built-In Filter System (FootPrint or Filter Magic system), consult the filter manufacturer's operation instructions for the recommended filtering procedure. Instructions for using the Filter Magic and Footprint filtration system are included in this manual.

7.1.a. "Manual" Draining/Filtering

The following procedure is recommended to drain and filter your cooking oil/shortening when a filter machine is not available:

1. Turn the fryer computer/controller switch to the OFF position. Screw the drain pipe (provided with fryer) into the drain valve. Make sure the drain pipe is firmly screwed into the drain valve and that the curved end is pointing down.
2. Position a metal container with sealable cover under the drain pipe. The metal container must be able to withstand the hot cooking oil/shortening and hold hot liquids. Frymaster recommends that a Frymaster filter cone holder and filter cone be used when a filter machine is not available. If you are using the Frymaster filter cone holder and cone, be sure that the cone holder rests securely on the metal container.
3. Open the drain valve slowly to avoid splattering. If splattering occurs, exercise extreme caution.
4. If the drain valve becomes clogged with food particles, use the Fryer's Friend (poker-like tool). Use this tool from the inside of the frypot ONLY. See photo below. Grip the tool on the handle as far as possible away from the cooking oil/shortening in the frypot. DO NOT hammer on the drain valve, this damages the drain valve ball. DO NOT insert the tool into the front of the drain to unclog the valve, hot oil/shortening will rush out creating an extreme hazard.

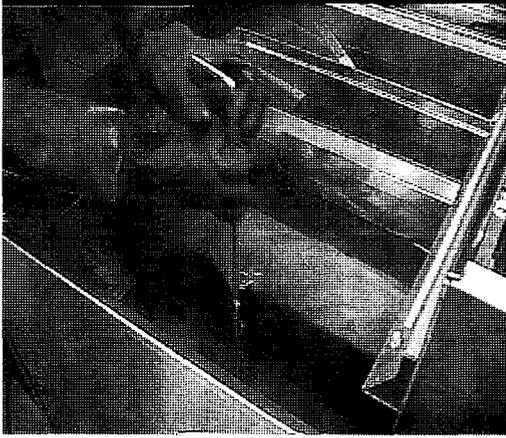


Figure 7-1

CAUTION: Allow the oil/shortening to cool to 100°F (38°C) or lower before transporting the container and removing the drain pipe. Oil/shortening temperature of 140°F (60°C) or higher will result in severe burns.

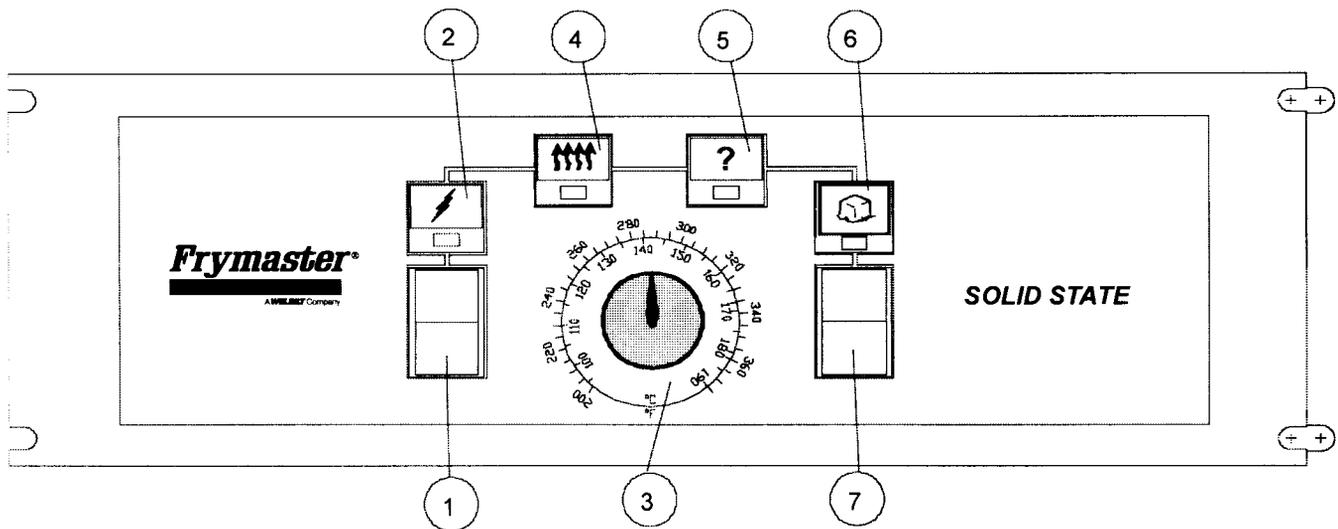
FOR SAFE, CONVENIENT DRAINING AND DISPOSING OF USED OIL/SHORTENING, FRYMASTER RECOMMENDS THE USE OF THE FRYMASTER SHORTENING DISPOSAL UNIT (SDU). THE SDU IS AVAILABLE THROUGH YOUR LOCAL DISTRIBUTOR.

5. After draining the oil/shortening, clean all food particles and residual oil/shortening from the frypot before refilling.
6. Close the drain valve and refill the frypot with clean, filtered oil/shortening.

8. SHUTTING FRYER(S) OFF

1. Press fryer computer/controller/timer ON/OFF switch(es) to OFF position.
2. Put frypot cover(s) in place over frypot(s).

9. ANALOG CONTROLLER



ITEM NO.

1. Power Supply Switch - controls power supply.
 2. Power On Light - indicates when electrical power is on.
 3. Temperature Control Knob - sets desired frying temperature.
 4. Heating Light - indicates element is on.
 5. Trouble Light - indicates malfunction of fryer control circuit or overheat condition. Reset by turning the ON/OFF switch OFF for 30 seconds, then ON.
 6. Melt Cycle Light - indicates unit is operating in melt cycle mode. Fryer will exit melt cycle mode when shortening reaches 180°F (82°C).
 7. Melt Cycle Switch - controls melt cycle operation.
3. Let elements cycle on and off automatically 3 times in order for the cooking oil/shortening temperature to be uniform. Stir, if necessary, to get all cooking oil/shortening in bottom of frypot melted.
 4. When the elements start for the fourth time, the pyrometer reading should be within 5°F (2°C) of the thermostat knob setting. If it is not, calibrate as follows:
 - a. Loosen set screw in thermostat control knob until outer shell of knob will rotate on insert inside knob.
 - b. Rotate outer shell of knob until index line on knob aligns with marking that corresponds to thermometer or pyrometer reading.
 - c. Hold knob and tighten set screw.
 - d. Recheck the thermometer or pyrometer reading and the thermostat knob setting the next time the elements come on.
 - e. Repeat Steps 4.a. through 4.d. until thermometer or pyrometer reading and knob setting agree within 5°F (2°C).
 - f. If calibration cannot be obtained for any reason, call a Factory Authorized Service Center.

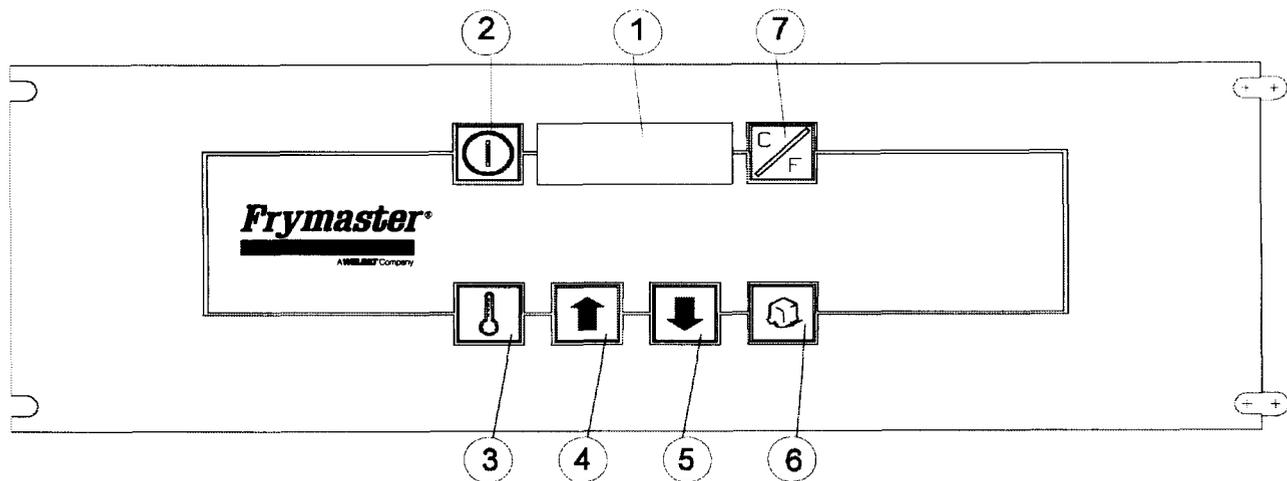
WARNING:

FRYER MUST BE FILLED WITH OIL, SHORTENING, OR WATER BEFORE TURNING ON CONTROLLER.

9.1. THERMOSTAT CALIBRATION - ANALOG CONTROLLER

1. Insert a good grade thermometer or pyrometer probe into the cooking oil/shortening near the fryer temperature sensing probe.
2. Turn thermostat knob to frying temperature.
5. Remove thermometer or pyrometer probe.

10. DIGITAL CONTROLLER



ITEM NO.

1. Lighted Display - display of various functions and operations.
2. On/Off Switch - controls power supply.
3. Temperature/Set-Point Display Switch - selects cooking oil/shortening temperature or set-point temperature.
4. Up Arrow Switch - raises set-point temperature.
5. Down Arrow Switch - lowers set-point temperature for left side of split pot and for full pot.
6. Melt-Cycle Switch - cancels melt-cycle mode.
7. C/F Switch - selects temperature display in Celsius or Fahrenheit.

WARNING:

FRYER MUST BE FILLED WITH OIL, SHORTENING, OR WATER BEFORE TURNING ON CONTROLLER.

10.1. ENABLE/DISABLE MELT CYCLE BYPASS

- A. The controller can be programmed to enable/disable the melt cycle bypass.
 1. With the controller in the OFF mode, press the Melt-Cycle Switch, Item 6 (for a split pot, press the right side switch). The display will read either a "0" meaning that the melt **can** be bypassed or a "1" meaning that the melt cycle **cannot** be bypassed.
 2. To change the bypass configuration, press and hold the Melt-Cycle Switch for 5 to 6 seconds to toggle the "0" to "1" or "1" to "0". When the display shows the desired setting release the Melt-Cycle Switch.

10.2. OPERATING INSTRUCTIONS - FULL POT

- A. Turn controller on by pressing ON/OFF Switch, Item 2.
 1. The controller software version number will display for 4 seconds then set-point temperature will display constantly. To view actual cooking oil/shortening temperature, press the Temperature Switch, Item 3. On export fryers, the actual shortening temperature will display constantly. To view the set-point temperature, press the Temperature Switch, Item 3.

2. The controller automatically enters melt-cycle mode if oil/shortening temperature is below 180°F (82°C).
3. To cancel melt-cycle mode, press the Melt Switch, Item 6.

CAUTION: Do not cancel the melt cycle if solid shortening is used.

4. When the cooking oil/shortening temperature reaches 180°F (82°C), the controller exits the melt-cycle mode and shuts off.
- B. To set the set-point temperature up or down, press the Up Arrow Switch, Item 4 to raise the set-point temperature, and the Down Arrow Switch, Item 5, to lower the set-point temperature.
1. The display will change at the rate of approximately one degree per second.
 2. After a change of about 12°F, the display will change to a faster rate allowing large changes in set-point temperature to be made quickly.
- C. To change from Fahrenheit to Celsius display, press the C/F Switch, Item 7.
1. Display will change from "XXX°F" to "xxx°C".
 2. Display will change back to "xxx°F" by pressing the C/F Switch, Item 7, again.
- D. When the controller has reached the set-point temperature, the heat indicator decimal point will go out, indicating the fryer is ready for the cooking process.

NOTE: The decimal point appearing between the first two numbers of the display indicates the heating source is on.

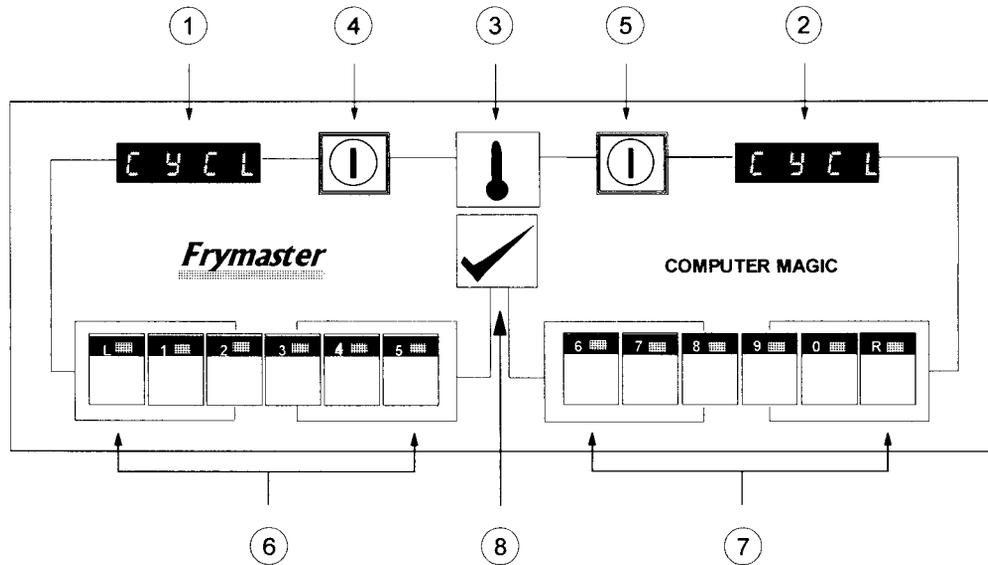
10.3. OPERATING INSTRUCTIONS - SPLIT POT

- A. Turn controller ON by pressing ON/OFF Switch, Item 2.
1. The controller software version number displays for 4 seconds, then set-point temperature displays constantly. To view actual cooking oil/shortening temperature, press the Temperature Switch, Item 3.
 2. Either side of the controller will automatically enter the melt cycle when that particular side ON/OFF Switch is

pressed if the shortening temperature is below 180°F (82°C).

3. To cancel melt-cycle mode, press the Melt Switch, Item 6, for the desired side.
CAUTION: Do not cancel melt cycle if you use solid shortening.
 4. When the shortening temperature reaches 180°F (82°C) in the side that has been turned on or both sides, the controller exits the melt-cycle mode and shuts off.
- B. To set the set-point temperature on either side of the controller, press the Up Arrow, Item 4, to increase the set-point temperature and the Down Arrow, Item 5, to lower the set-point temperature.
1. The left or right display will change at the rate of approximately one degree per second.
 2. After a change of about 12°F, the display will change to a faster rate allowing large changes in set-point temperature to be made quickly.
- C. To change from Fahrenheit to Celsius display on either side, press either left or right C/F Switch, Item 7
1. Both displays will change from "xxx°F" to "xxx°C".
 2. Both displays will change back to "xxx°F" by pressing the C/F Switch, Item 7, again.
- D. When either side of the controller has reached the set-point temperature, the heat indicator decimal point will go out, indicating the fryer is ready for cooking process.
- E. NOTE: The decimal point appearing between the first two numbers of the display indicates the heating source is on.
- F. Other indications that could be displayed on the Lighted Display:
1. "HOT" and actual frypot temperature - shortening temperature is above 395°F (202°C) (or 410°F [210°C] for CE fryers) which is too hot for most fried products.
 2. "PRDB" - indicates the controller has detected a problem in the temperature measuring circuits, including probe.
 3. "HELP" - indicating latching circuit did not lock in or an internal component failure.

11.COMPUTER MAGIC III OPERATING INSTRUCTIONS



Item No.

1. Lighted Display -- left display of various functions and operations.
 2. Lighted Display -- right display of various functions and operations.
 3. Storage and Temperature Check Switch -- locks program in computer and/or displays frypot temperature when depressed.
 4. ON/OFF Switch -- controls on/off for left frypot.
 5. ON/OFF Switch -- controls on/off for right frypot.
 - 6/7. Product and Coding Switches -- provides access to computer and programming functions.
 8. Programming Switch -- used when reprogramming the computer memory.
- CAUTION:**
BEFORE TURNING ON COMPUTER, MAKE SURE THE FRYER IS FILLED WITH COOKING OIL/SHORTENING OR WATER.
- ### 11.1. OPERATING INSTRUCTIONS
- A. Turn the computer on by pressing the  switch.
1. One of the following displays will appear:
 - a. CYCL, indicating that the burner is operating in the melt-cycle mode. Fryer will remain in the melt-cycle mode until it reaches 180°F (82°C) or is canceled manually.
 - b. HI, indicating that the pot temperature is 21°F (12°C) or higher than the set point.
 - c. LO, indicating that the pot temperature is 21°F (12°C) or lower than the set point.
 - d. "----" indicating that the fryer temperature is in the cooking range. NOTE: For best results, do not cook product until the display reads "----".
 - e. HELP, indicates a heating problem.
 - f. HOT, indicates that the pot temperature is more than 410°F (210°C). (395°F (202°C) for European Community fryers.)
 - g. PROB, indicates that the computer has detected a problem in the temperature measuring circuits, including probe.

NOTE: "." decimal point between digits 1 and 2 in either display area indicates that the burner is on.

B. Melt-Cycle Cancel Feature (built-in computers only).

CAUTION: Do not cancel the melt cycle mode if you use solid shortening.

The computer will display CYCL during melt-cycle operation. To cancel melt cycle on a full pot, depress the "R" button. To cancel the melt cycle on a split pot, use "L" button for left side pot and "R" button for right side. CYCL will be replaced by LO. The decimal point between digits 1 and 2 will illuminate indicating that the elements are on.

C. Cook-cycle operation is initiated by pressing the product switch:

1. The basket lift (on fryers so equipped) will lower the product into the cooking oil/shortening.
2. The display will indicate the previously programmed cook time and begin countdown.
3. If shake time is programmed, you will be notified to shake the product "X" seconds after the cook cycle begins (X=amount of time programmed). An alarm will sound and the display will read SH_. The blank will be the switch number. If no shake time is programmed, SH_ will not appear during the cook cycle.
4. At the end of cooking cycle, an alarm will sound; COOC will be displayed and the associated product switch indicator will flash. To cancel the cook alarm, press the flashing product switch.
5. At this time, the hold time will be displayed (if programmed greater than 0) and

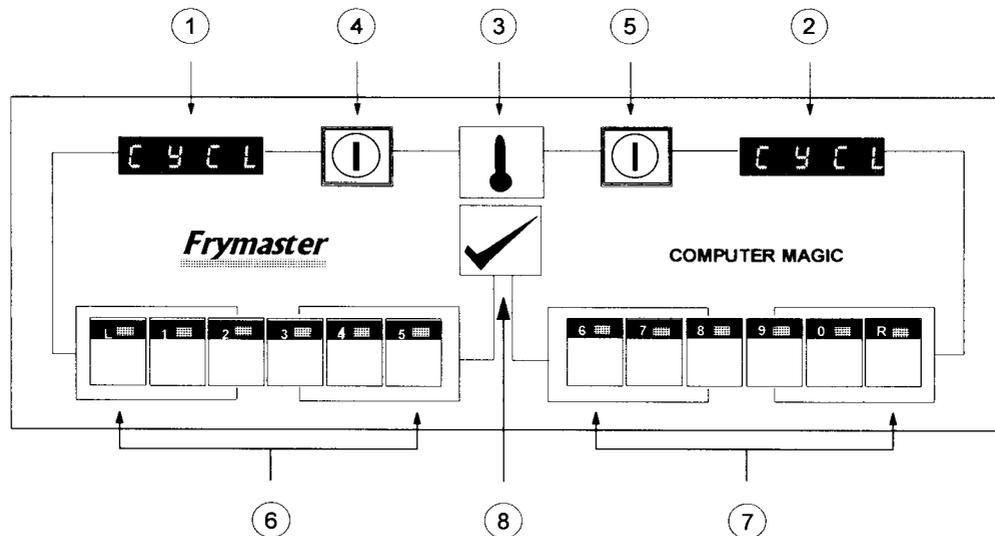
countdown will begin. When the hold time counter reaches 0, an alarm and Hd_ is displayed. The blank will be the switch number. The hold alarm is canceled by pushing the  switch. If display is in use, hold time will count down invisibly until display is free.

11.2. CHECKING TEMPERATURE

- A. Check the cooking oil/shortening temperature at any time by pressing the  switch once. Check the set point by pressing the  switch twice.
- B. During the idle periods, when the fryer is on but not in use, "----" should appear on both displays on a single frypot computer. "----" will appear on the display of the side that is turned on in a dual pot computer. If not, check actual temperature and set point.
- C. If you suspect a defective probe, check the cooking oil/shortening temperature with a thermometer. Verify that the computer readout is reasonably close to your measured reading.

NOTE: The electronic circuitry can be affected adversely by current fluctuations and electrical storms. If the computer does not function or program properly for no apparent reason, reset the computer by unplugging the power cord and plugging it back in.

12.COMPUTER MAGIC III PROGRAMMING INSTRUCTIONS



ITEM NO.

1. Lighted Display -- left display of various functions and operations.
2. Lighted Display -- right display of various functions and operations.
3. Storage Switch -- locks program in computer.
4. ON/OFF Switch -- controls power for left side of dual computer.
5. ON/OFF Switch -- controls power for right side of dual computer.
- 6/7. Product and Coding Switches -- enter code for access to computer and programming functions.
8. Programming Switch -- used to program computer memory.

CAUTION: BEFORE TURNING ON COMPUTER, MAKE SURE THE FRYER IS FILLED WITH OIL, SHORTENING, OR WATER.

12.1. PROGRAMMING INSTRUCTIONS

12.1.a. FULL POT

1. Activate the computer by pressing either  switch.

2. To enter the program mode, first press the  switch. CODE will appear in the left display. If you have pressed this switch in error and do not wish to program, press the  switch again. Note: The computer will flash BUSY if cooking is in progress.
3. Press 1,6,5,0 in that sequence to enter the program mode.
4. "SP-r" (SET POINT) will appear in the left display. This is for setting the cooking temperature. The temperature previously selected will be displayed in the right display. Enter new temperature desired. Press the  switch to lock in temperature setting. If you do not wish to change the setting, press the  switch.
5. "SELP" (SELECT PRODUCT) will appear in the left display. Press the product button to be programmed.
6. SENS will appear in the left display. The sensitivity number previously selected will be displayed in the right display. Enter the new desired sensitivity number, the range is 1 to 9. Enter "0" for no sensitivity. Press the  switch to lock in the setting.

Sensitivity is a built-in feature that adjusts computer cooking time to compensate for the drop in cooking oil/shortening temperature when a basket of product is placed into the fryer. Sensitivity basically shrinks or stretches cooking time to counterbalance variances in product density, basket-load size, and initial temperature. A proper sensitivity setting will ensure a high quality product. For example: 4 ounces of french fries can be programmed to be cooked to the same quality as 2 pounds. A good initial setting is 4 or 5. Some experimenting with the range of 1 to 9 may be required to achieve optimum quality.

7. COOC will now appear in the left display. If a cooking time has been entered before programming, it will appear in the right display. If that time is correct, press the switch. If you wish to change that time, enter the desired numbers. (The new time will be displayed in the left display.) Press the switch to lock in the setting

8. SH- now appears in the left display. The previous shake time (if any) will appear in the right display. If a product requires shaking during the cooking process, set the shake time by pressing the number of minutes to cook before shaking. Press the switch to lock in the time. If no shake time is required, press "0" and press the switch. Example: Total cook time 3:00 minutes, shake after cooking 1:00 minute.

During operation, at the end of the set time, a beeper will sound and the product button indicator will flash for 3 seconds.

9. HD- will now appear in the left display. Set the time you require for holding the cooked product, 13 seconds to 60 minutes. Press the switch. If you do not wish to use the hold time, enter "0" and press the switch.

10. SELP will appear in the left display. If you desire to program more products, return to Step 5. If no more programming is required, lock in program by pressing the switch.

ADDITIONAL HOLD-TIME INSTRUCTIONS

Programming hold timer to another product button
If the same product is being cooked in more than one basket, any product button can be programmed to use the hold timer normally used with a different product button. Example: Program button "3" for 7:00 minutes hold time. Then when programming button "R" for hold time, press address 4. Both "3" and "R" will then use the same hold time of 7:00 minutes. See below for button numbers and their assigned access numbers. Any other button can be programmed to use the same hold time.

Button	L	1	2	3	4	5	6	7	8	9	0	R
Address	1	2	3	4	5	6	7	8	9	10	11	12

12.1.b. SPLIT POT

1. Activate the computer by pressing either switch.
2. Enter the program mode by pressing the switch. CODE will appear in the left display. If you have pressed this switch in error and do not wish to program, press the switch again. NOTE: You cannot program the computer while it is in the cook mode. The computer will flash busy if cooking is in process.
3. Enter 1,6,5,0 in that sequence.
4. "SP-r" (SET POINT) will appear in the left display. This is for setting the cooking temperature for the right pot. The temperature previously selected will be displayed in the right display. Enter new temperature desired. Press the switch to lock in temperature setting. If you do not wish to change the setting, press the switch.
5. "SP-l" (SET POINT) will appear in the left display. This is for setting the cooking temperature in the left pot. The temperature previously selected will be displayed in the right display. Enter new temperature desired. Press the switch to lock in temperature setting. If you do not wish to change the setting, press the switch.

- "SELP" (SELECT PRODUCT) will appear in the left display. Select buttons "L" through "5" for programming the left pot; select buttons "6" through "R" for programming the right pot. Press the product switch to be programmed.
- SENS will appear in the left display. Refer to "Full Pot Programming", Steps 6 - 10 to program individual product buttons

12.2. BOIL FEATURE

- Before switching the fryer(s) ON, close the frypot drain valve(s). Fill empty frypot with mixture of cold water and FRYMASTER FRYER 'N' GRIDDLE cleaner. Follow instructions when mixing.

NOTE: BOIL MODE WILL NOT TURN ON BOTH SIDES OF COMPUTER. EACH SIDE WILL HAVE TO BE TURNED ON SEPARATELY.

- To program computer for Boil Feature, press either  switch.
- Press the  switch. CODE will appear in the left display.
- Enter 1, 6, 5, 3 in that sequence. The right display will read BOIL. The temperature is automatically set for a temperature of 195°F (91°C). The fryer will attain this proper boil temperature and remain there until either  switch is pressed which cancels the boil-out mode. In high-altitude locations, constantly monitor the fryer for over-boil conditions. If over-boil occurs, turn off fryer immediately, allow to cool, and re-enter boil-out mode to continue the boil-out operation.

12.3. FRYER RECOVERY TIME CHECK

Recovery Time - An acceptable recovery time is 100 seconds or less.

- To check recovery time, press the  switch. CODE will appear in the left display.

- Enter 1, 6, 5, 2 in that sequence. The recovery time will appear in both displays for 5 seconds.

12.4. TEMPERATURE SELECTION -- FAHRENHEIT TO CELSIUS

- To change the computer temperature from Fahrenheit to Celsius or Celsius to Fahrenheit, press either  switch.
- Press the  switch. CODE will appear in the left display.
- Enter 1, 6, 5, 8 in that sequence. The computer will automatically convert the temperature from Fahrenheit to Celsius or Celsius to Fahrenheit.
- Press the  switch to display the temperature in the newly selected mode.

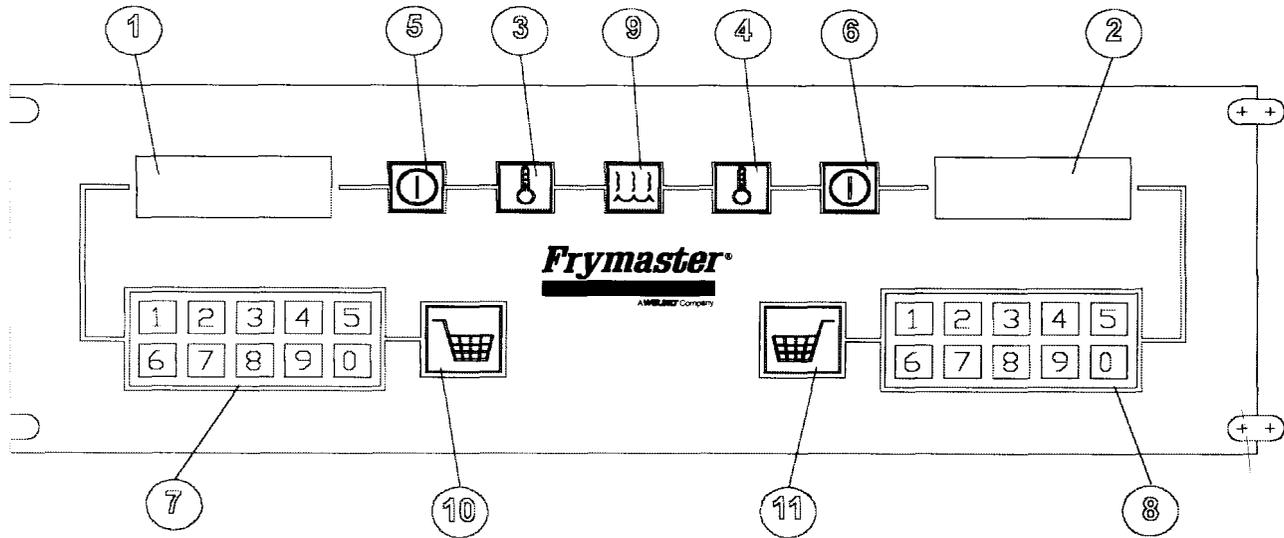
12.5. CONSTANT OIL TEMPERATURE DISPLAY MODE

- To program constant temperature display, press the  switch.
- Press the  switch. CODE will appear in the left display.
- Enter 1, 6, 5, L in that sequence. The cooking oil/shortening temperature will display constantly in the right display on a full pot and in both displays on a split pot.

NOTE: During the product cooking process the cooking time will not be displayed, but timing will be taking place.

- To remove the constant oil-temperature display and display the cooking time, repeat Steps 2 and 3.

13. TIMER CONTROL PANEL



ITEM NO

1. Lighted Display - left side display of various functions and operations.
2. Lighted Display - right side display of various functions and operations
3. Temperature Check Switch - controls left side of split pot. Press once for set point. Press again to return to cook time. (Full pot will display in Item 2.)
4. Temperature Check Switch - controls right side of split pot. Press once for set point. Press again to return to cook time. (Full pot will display in Item 2.)
5. On/Off Switch - controls power supply for left side of split pot and for full pot.
6. On/Off Switch - controls power supply for right side of split pot and for full pot.
7. Cook Time and Temperature Set Switches - controls left side of full or split pot.
8. Cook Time and Temperature Set Switches - controls right side of full or split pot.
9. Boil Mode Switch - controls boil mode.
10. Left Basket Lift Switch - controls left basket lift and cancels alarm.
11. Right Basket Lift Switch - controls right basket lift and cancels alarm.

CAUTION: FRYER MUST BE FILLED WITH OIL, SHORTENING, OR WATER BEFORE TURNING ON CONTROLLER.

13.1. TIMER CONTROLLER OPERATING INSTRUCTIONS

13.1.a. TURNING THE UNIT ON

SPLIT POT:

Left side press ON/OFF switch, Item 5.
Right side press ON/OFF switch, Item 6.

FULL POT:

Press ON/OFF switch, Item 5 or 6.

13.1.b. ADJUSTING THE TEMPERATURE

SPLIT POT:

Left side - press TEMPERATURE CHECK SWITCH, Item 3. Current set point is displayed in Item 1. To change set point, enter new temperature with numbered keys, Item 7. Press TEMPERATURE CHECK SWITCH, Item 3 or 4, to lock in set point. If you do not need to change setting, return to cook time by pressing Item 3 or 4.

Right side - follow left side procedure using right side controls, Items 4, 2, 8.

FULL POT:

Press TEMPERATURE CHECK SWITCH, Item 3 or 4. Current set point is displayed in right display. To change set point, enter new temperature with numbered keys, Item 8. Press TEMPERATURE CHECK SWITCH, Item 3 or 4, to lock in set point. If you do not need to change setting, return to cook time by pressing Item 3 or 4.

13.1.c. ADJUSTING THE TIMERS

The Electronic Timer Controller is always ready to time the cook operation for the time displayed in Items 1 and 2. You may change the time using the following procedure:

Left Basket Timer - enter new time with number keys, Item 7.

Right Basket Timer - enter new time with number keys, Item 8.

13.1.d. COOKING INSTRUCTIONS

Press LEFT BASKET LIFT SWITCH, Item 10 or RIGHT BASKET LIFT SWITCH, Item 11 to initiate a timed cook cycle. The corresponding displayed time now counts down. At time-out, the basket lift removes the product from the cooking oil/shortening. An audio alarm alerts the operator that cooking is completed, and the display area shows COOC.

Press the LEFT BASKET LIFT SWITCH, Item 10, or RIGHT BASKET LIFT SWITCH, Item 11, to cancel the alarm.

13.1.e. BOIL-MODE OPERATION

Press BOIL-MODE SWITCH, Item 9, to reset the timer to 195°F (91°C). The fryer will now maintain 195°F (91°C) until either On/Off switch is pressed, at which time the controller will return to the previously set value.

13.1.f. MELT-CYCLE OPERATION

The fryer automatically goes into melt cycle if cooking oil/shortening temperature is under 180°F (82°C). To override melt cycle, press RIGHT BASKET LIFT SWITCH, Item 11. For Split Pot, press BASKET LIFT SWITCH, Item 10 or 11 corresponding to pot being used.

13.1.g. ADDITIONAL INSTRUCTIONS

The controller automatically selects Fahrenheit/Celsius temperature values. Temperature values less than 190°F are considered Celsius values.

The Electronic Timer Controller stores the current time and temperature settings when the unit is turned off with the On/Off switches, Items 5 and 6. However, in the event of power failure, recheck time and temperature setting.

13.1.h. FRYER ALARMS

The Electronic Controller Timer will display the following:

Heat Failure Alarm "**HELP**": displayed continuously indicates that there has been a heating failure. High Temperature Alarm Hot: displays if the frypot temperature is above 385°F (196°C). Defective Probe Alarm "**Prob**": indicates the probe is defective.

14.TROUBLESHOOTING GUIDE

Directions for Troubleshooting Flow Chart

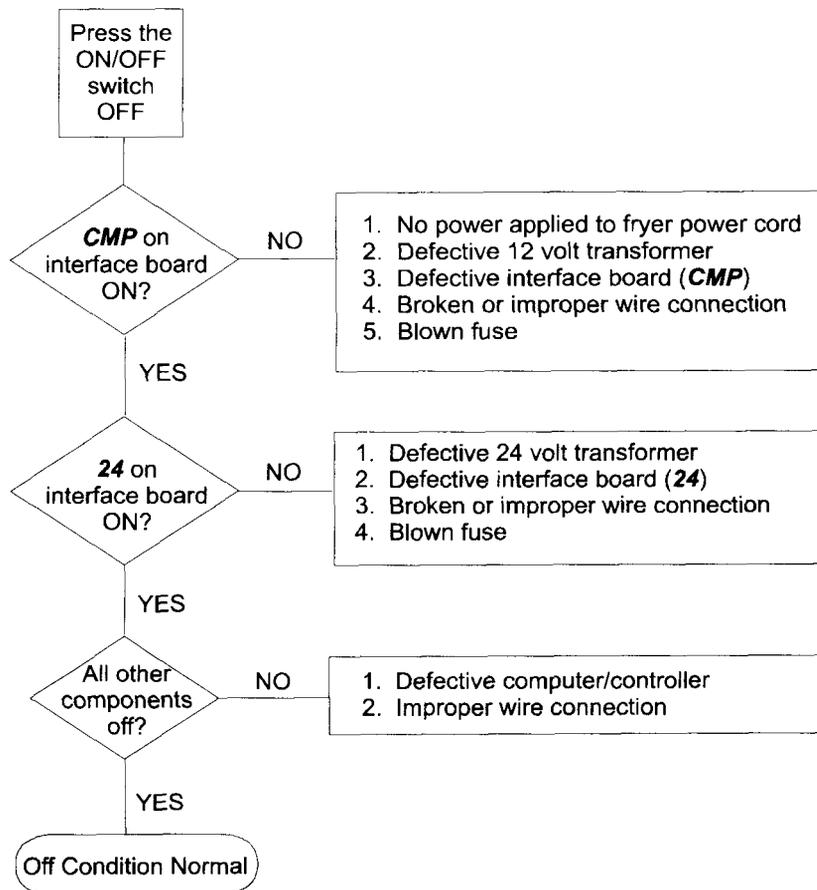
1. Perform the test set-up at the beginning of each condition.
2. **Normal operation** ("yes" after each decision block) flows down the page in sequence.
3. **Abnormal operation** (a "no" answer) branches to the right side of the page where you will find the steps for problem resolution.

Always start at the first condition and follow each step *in sequence*.

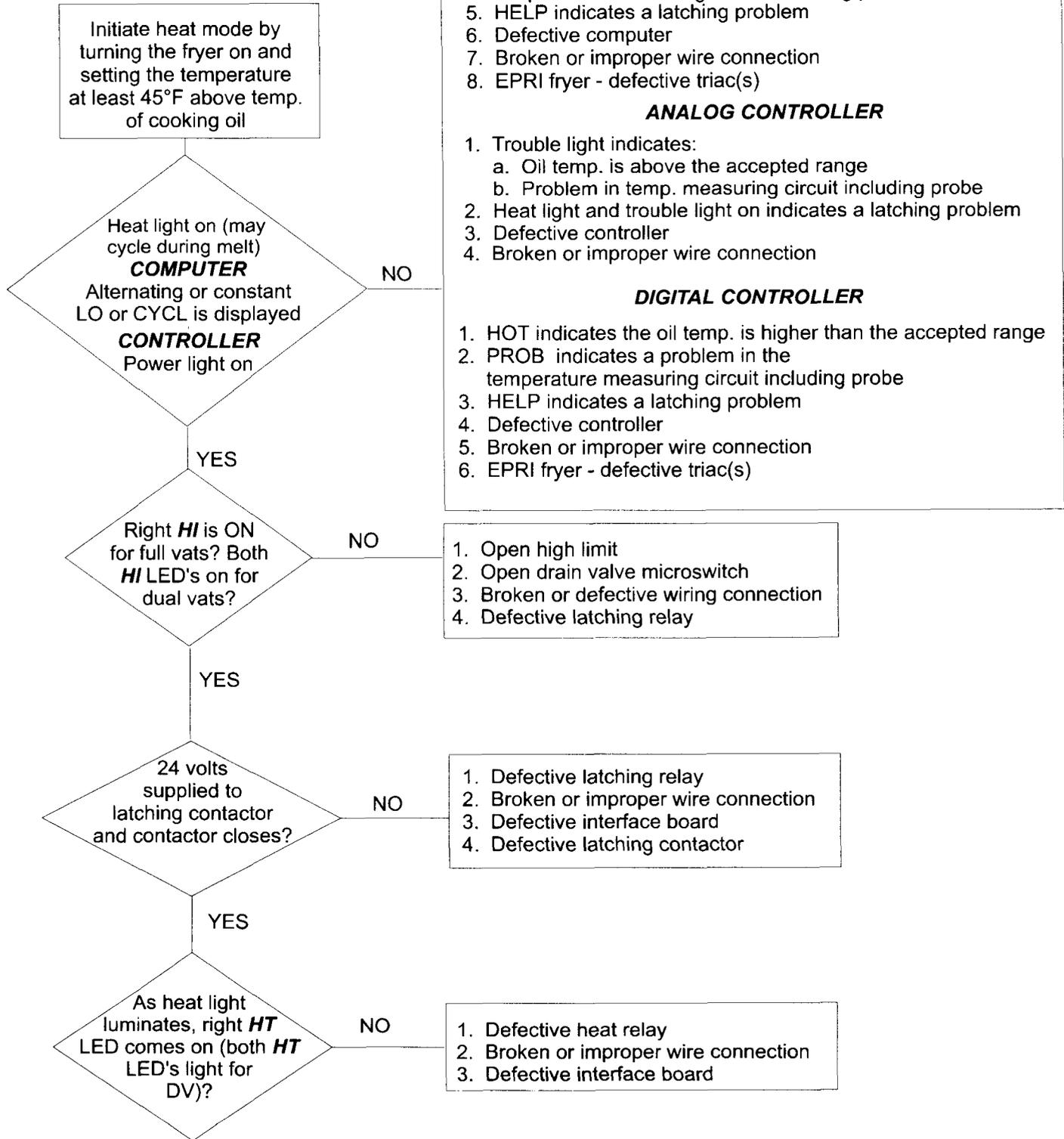
WARNING: Inspection, testing and repair of electrical equipment should be performed by qualified service personnel. Unplug the unit before servicing, except when electrical tests are required.

DANGER: Use extreme care during electrical circuit tests. Live circuits will be exposed.

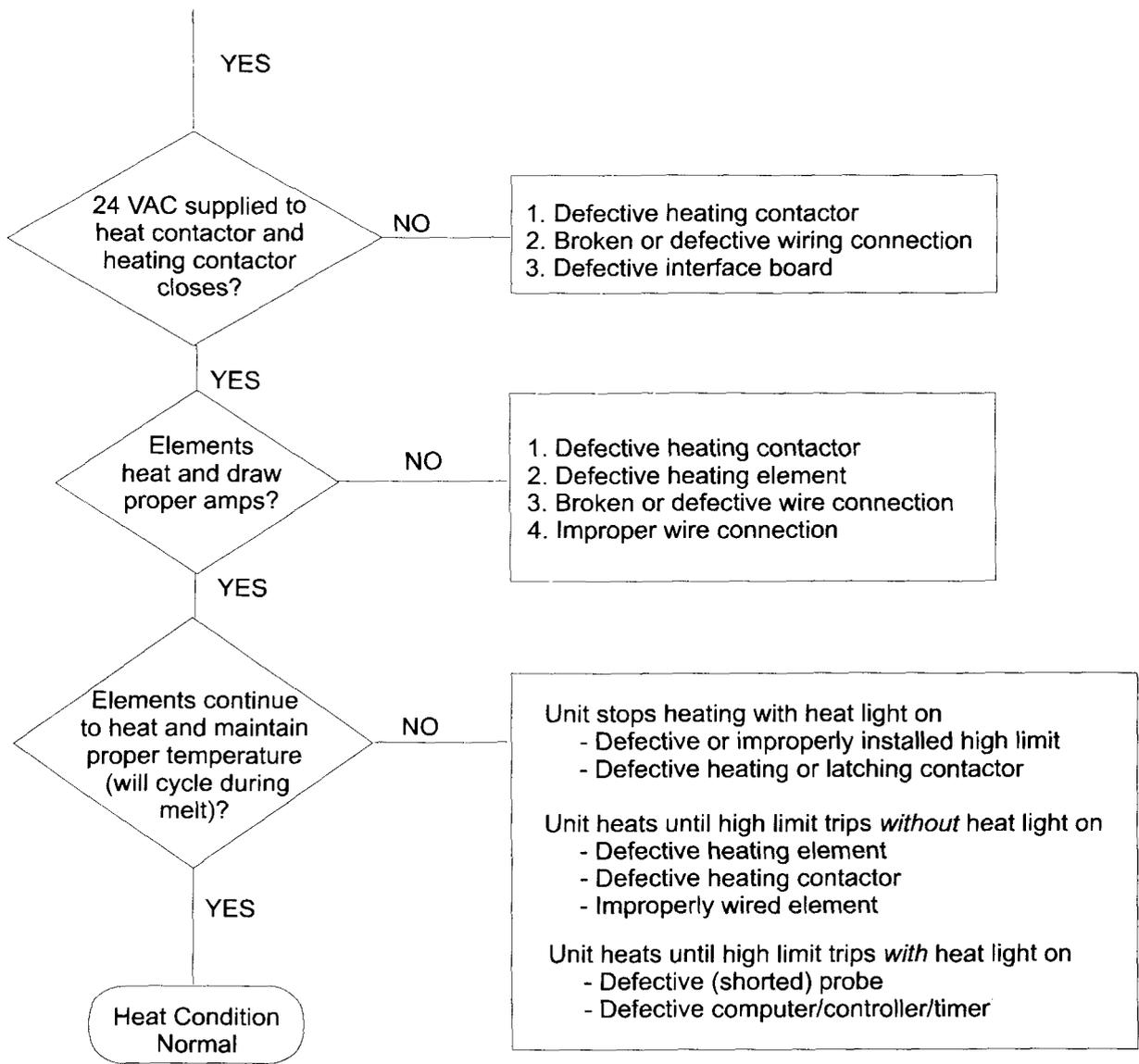
Off Condition



Heat Condition



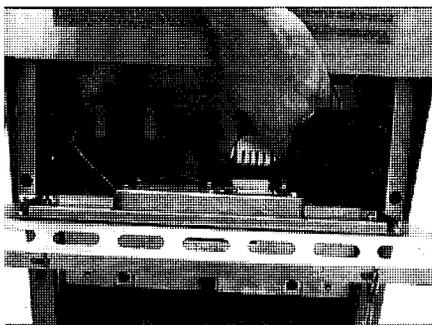
continued



15.SERVICE PROCEDURES

A. Replace Computer/Controller

1. Place the computer/controller in the OFF position.
2. Remove the 2 control panel screws.
3. The computer/controller and bezel is hinged at the bottom and will swing open from the top.
4. Unplug the wiring harness from the back of the computer/controller.



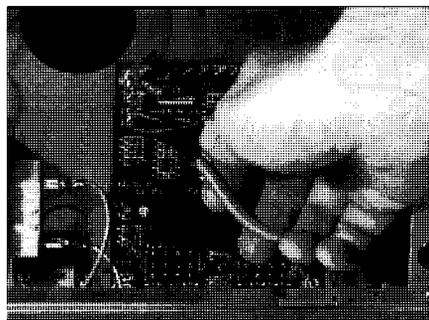
5. Remove the ground wire by unscrewing the securing nut.



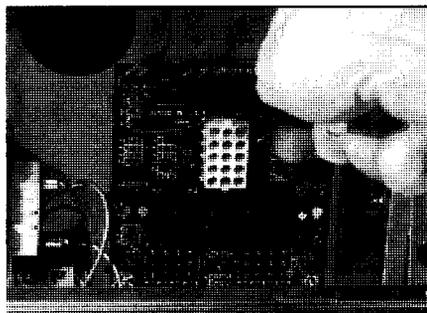
6. Remove the computer/controller and bezel from the control panel.
7. Reverse the preceding steps to install a new computer/controller.

B. Replace Interface Board

1. Unplug power cord(s). Perform Section A, Steps 1-6, *Replace Computer/Controller*.
2. Unplug the wiring harness from the interface board. Remove all wiring from the terminals of the interface board, marking each wire for reattachment.

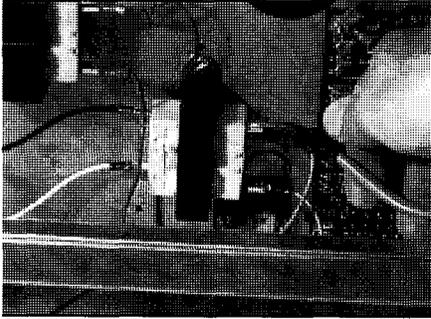


3. Remove the screws securing the control panel. Set the control panel/screws aside.
4. Remove the screws securing the capping piece. Set the capping piece/screws aside.
5. Remove the screws securing the component box. Let the component box drop down enough so that the wire harness can be unplugged from the back of the box assembly.
6. Remove the nuts from each corner of the interface board and slide the board from the studs. Install the new interface board by reversing the previous procedures. Make sure you reconnect the wiring to the proper terminals and the harnesses to the correct connectors.

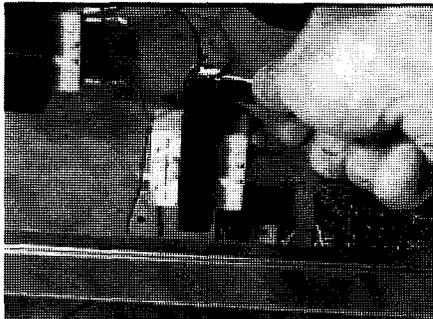


C. Replace Transformer

1. Unplug power cord(s). Perform Step A, 1-6, *Replace Computer/Controller*.
2. Remove all wiring from the terminals of the transformer to be replaced.



3. Remove the nuts that secure the transformer to the component box.



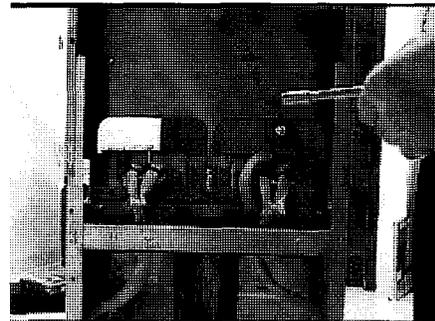
4. Install the new transformer by reversing the preceding procedures. Make sure you reconnect the wiring to the proper terminals and the harnesses to the correct connectors.

D. Replace Temperature Probe

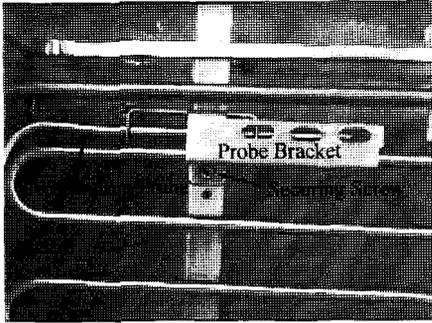
1. Remove the power from the fryer by unplugging from the electrical source
2. Drain the cooking oil from the frypot.
3. Remove the fryer from the exhaust hood to gain access to the rear of the fryer.
4. Remove the screws from the top, center and bottom back covers. Set the covers and screws aside.



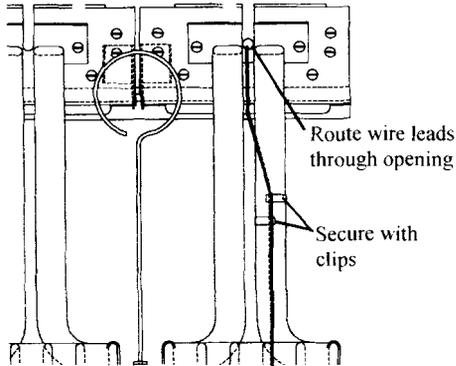
5. Remove the screws securing the tilt housing cover. Set the tilt housing cover aside.



6. Disconnect the wire harness containing the probe wiring. It may be necessary to remove the wire ties.
7. Use a pin pusher to remove the probe wires from the connector. Mark each wire for re-assembly.
9. Remove the screw(s) securing the probe bracket to the element.



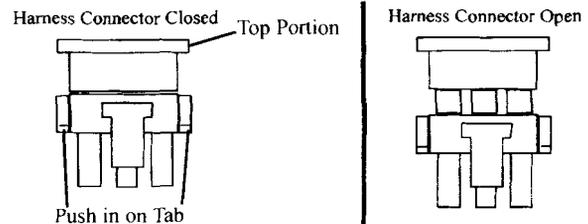
10. Thread the probe wire through the hole in the tilt plate assembly and remove the probe and the securing components from the element.
11. Remove the probe from the probe bracket. Place the new probe into the bracket.
12. Place the new temperature probe assembly onto the element and secure with the screws removed earlier. Clip the probe onto the rear of the element. The temperature probe assembly should be oriented in the same manner as the probe being replaced.



13. Thread the probe wires into the harness connector as removed in Step 7.
14. Lower the element into the frypot.
15. Place the tilt housing cover over the tilt housing assembly and secure with screws.
16. Install the top, center and bottom back covers and secure with screws.

E. Replace Heating Element

1. Perform Section D, *Replace Temperature Probe*, Steps 1-7.
2. Remove the element wires from the connector. Press down on either side of the connector while pulling up on the top portion. The connector will open from the top. Pull all wires from the connector.

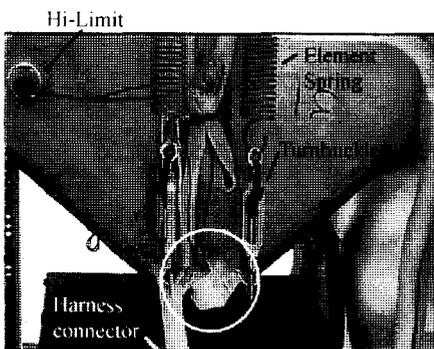


3. Remove the screws securing the temperature probe bracket from the element. Remove the probe clamp. Set the temperature probe and probe-securing components aside.
4. Disconnect the element spring.
5. Remove the element mounting screws and pull the element out of the frypot.
6. If present, remove the lift handle from the old element and install it on the new one.
7. Install the temperature probe and probe-securing components onto the replacement element.
8. Install the replacement element in the frypot and secure with the mounting screws removed in Step 5.
9. Route the element leads (terminals) to the rear of the fryer.
10. When replacing the right element (as viewed from the rear of the fryer) insert pin terminals into the corresponding pin holes in the 6-pin connector. When all pin terminals have been fully inserted, close the connector by sliding the halves together until the tabs snap back into place.

11. When replacing the left element (as viewed from the rear of the fryer), use the 9-pin connector, inserting the leads from the replacement element and closing the connector, see the previous step.
12. Insert the connector(s) into the receptacle(s) on the rear of the contactor box, ensuring that the latches lock the connectors in place.
13. Install the temperature probe wires (marked for re-assembly) in the corresponding pin locations.
14. Reconnect the element spring.
15. Place the tilt housing cover over the tilt housing assembly and secure with screws.
16. Install covers and secure the covers with screws.
17. Position the fryer under the exhaust hood.

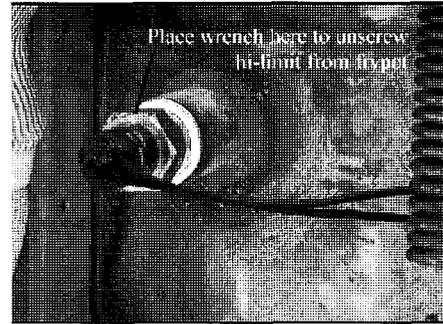
F. Replace Hi-Limit

1. Perform Section D, *Replace Temperature Probe*, Steps 1-4.
2. Disconnect the wire harness containing the hi-limit wires.



3. Use a pin pusher to remove the two hi-limit wires from the wire harness connector. For split-pot fryers, remove only the wires for the hi-limit to be replaced. Mark each wire for re-assembly.

4. Use an opened-end or box-end wrench to unscrew and remove the hi-limit from the frypot.



5. Apply Loc-Tite PST 567 sealant to the replacement hi-limit threads.
6. Screw the replacement hi-limit into the frypot and tighten securely. **DO NOT OVERTIGHTEN.**
7. Insert the replacement hi-limit wires into the proper pinholes in the connector. The same 2 pinholes from which the defective hi-limit wires were removed.
8. Reconnect the wire harness connector.
9. Install and secure the back covers.
10. Position the fryer under the exhaust hood.

G. Replace Frypot

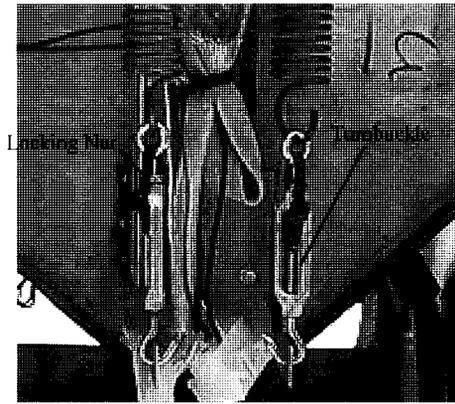
1. Perform Section D, *Replace Temperature Probe*, Steps 1-7.
2. Perform Section A, *Replace Computer/Controller*, Steps 1-6.
3. Disconnect the wire harness containing the hi-limit wires.
4. Use a pin pusher to remove the hi-limit wires from the wire harness connector.
5. Use an opened-end or box-end wrench to unscrew and remove the hi-limit from the frypot.

7. Disconnect the wire harnesses connected to the contactor box.
8. Remove the screws securing the capping piece from the fryer. Remove the capping piece and set aside. It may be necessary to remove the wiring covers from the front of the contactor box.
10. If the fryer has a built-in filtration system, remove all the plumbing from the frypot. This includes rear-flush and square drain plumbing.
9. Remove the screws securing the frypot to the front frame of the fryer.
11. Carefully lift the frypot from the cabinet.
12. Remove the drain valve from the old frypot and install on the new frypot.
13. Apply Loc-Tite Sealant PST 567 to the hi-limit threads. Install the hi-limit previously removed into the new frypot.
14. Disconnect the tilt plate spring and turnbuckle assembly from the old frypot.
15. Remove the securing screws from the tilt plate. Lift the tilt plate/heating element assembly from the old frypot and install on the new frypot.
16. Follow the preceding steps to install the new frypot into the fryer.

NOTE: Apply Loc-Tite Sealant PST 567 to all pipe fittings prior to installation.

H. Adjust Tilt Plate Spring Tension

1. Perform Section D, *Replace Temperature Probe*, Steps 1-5.
2. Loosen the locking nut on the turnbuckle.



3. Raise the element until it locks into the raised position. There should be just enough tension to hold the element in position. If the element will not lock and hold in the raised position, turn the turnbuckle to the left until the desired tension is achieved.
4. Lower the element in the frypot. There should be just enough tension on the element to hold the element in the down position. If the element will not stay in the lowered position, turn the turnbuckle to the right until the desired tension is achieved.
5. After you have set the proper spring tension for the element, tighten the locking nut on the turnbuckle.
6. Replace the rear access covers and tilt housing cover.

I. Replace Contactor

1. Perform Section D, *Replace Temperature Probe*, Steps 1-3.
2. Remove the screws securing the bottom and center rear access covers. Set the screws/covers aside.
3. If present, remove the screws securing the wiring covers to the front of the contactor box. Set the covers/screws aside.
4. Disconnect the wire harnesses from the front and rear of the contactor box.

16. PREVENTIVE MAINTENANCE

16.1. CLEAN INSIDE AND OUTSIDE OF FRYER CABINET - DAILY

Clean inside the fryer cabinet with a dry, clean cloth. Wipe all accessible metal surfaces and components to remove accumulated oil/shortening and dust.

Clean outside the fryer cabinet, with a clean, damp cloth soaked with dishwashing detergent. Wipe with a clean, damp cloth.

16.2. CLEAN FRYPOT AND HEATING ELEMENTS - ONCE A WEEK

NEVER operate the fryer(s) with an empty frypot.

BOILING OUT THE FRYPOT:

Clean frypot(s) as follows before filling with cooking oil/shortening:

1. Before switching the fryer(s) ON, close the frypot drain valve(s), fill empty frypot with mixture of cold water and Frymaster Fryer 'N' Griddle Cleaner. Follow instructions on bottle when mixing.
2. Press fryer ON/OFF switch to the ON position, and melt switch to OFF on solid-state thermostat controller.
3. Set thermostat knob or digital controller to 200°F (93°C) or program computer for Boil Operation as outlined in Programming Instructions.
4. Simmer the solution for 45 minutes to one hour. Do not allow water level to drop below the bottom oil-level line in frypot during boil-out operation.

Do not leave fryer unattended. The boil-out solution may foam and overflow if fryer is left unattended. Press ON/OFF switch to the OFF position to control this condition.

5. Turn the fryer controller/computer ON/OFF switch(es) to the OFF position.
6. Add 2 gallons of water. Drain out the solution and clean the frypot(s) thoroughly.

CAUTION: Do not run water/boil-out solution through filtration system.

7. Refill the frypot(s) with clean water. Rinse the frypot(s) twice, drain and wipe down with a clean, dish towel. Thoroughly remove all signs of water from the frypot and elements before filling the frypot with cooking oil/shortening.

16.3. CLEAN DETACHABLE PARTS AND ACCESSORIES - ONCE A WEEK

Wipe all detachable parts and accessories with a clean, dry cloth. Use a clean cloth saturated with Frymaster Fryer 'N' Griddle Cleaner to remove accumulated carbonized oil/shortening on detachable parts and accessories. Rinse the parts and accessories thoroughly with clean water and wipe dry before reinstalling.

16.4. CHECK CALIBRATION OF FRYER WITH ANALOG CONTROLLER - ONCE A MONTH

1. After the cooking oil/shortening has operating temperature, let the heating elements cycle at least 4 times
2. Insert a good thermometer or pyrometer near the temperature-sensing probe approximately 3 inches (7.5mm) deep into the cooking oil/shortening. When the heating elements just cycle on after the fourth time, the thermometer should within $\pm 5^{\circ}\text{F}$ ($\pm 2^{\circ}\text{C}$) of the thermostat knob setting or computer programmed temperature.
3. See the applicable calibration section of the controlling device that you are using.

17. FILTRATION

OPERATING INSTRUCTIONS

WARNING: Exercise extreme care when working with hot cooking oil/shortening. Allow the filter pan to completely cool before attempting to change the filter paper.

CAUTION: Never run water through built-in filtration system

17.1. Preparing the Filter Unit for Use

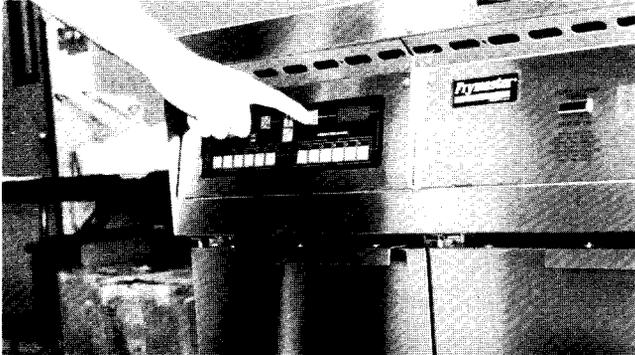


Fig. 17-1

1. Turn the fryer OFF.

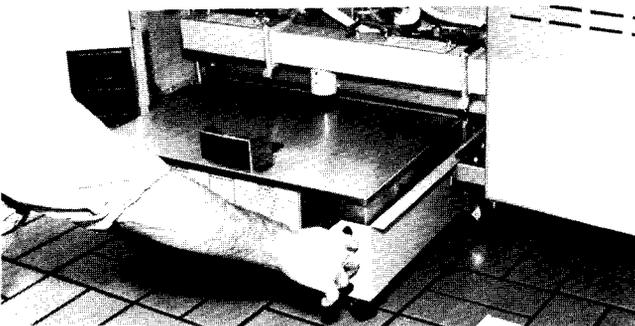


Fig. 17-2

2. *Footprint III* - Pull the filter carriage forward.
Filter Magic II - Remove the filter unit from the cabinet.

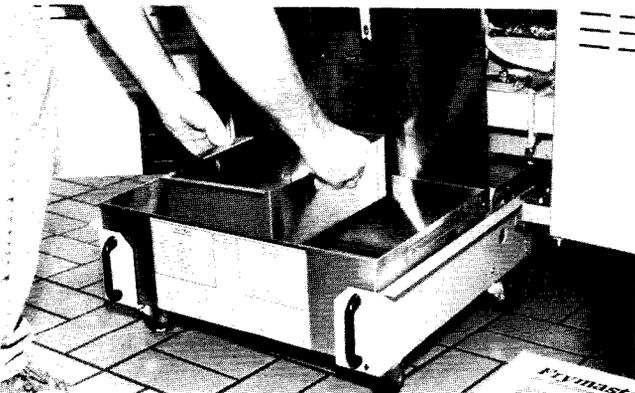


Fig. 17-3

3. *Footprint III* - Lift the cover, remove the crumb tray and clean.

Filter Magic II - Remove the crumb tray and clean.



Fig. 17-4

4. Remove the paper hold-down ring and clean.



Fig. 17-5

5. Remove the dirty paper and discard.

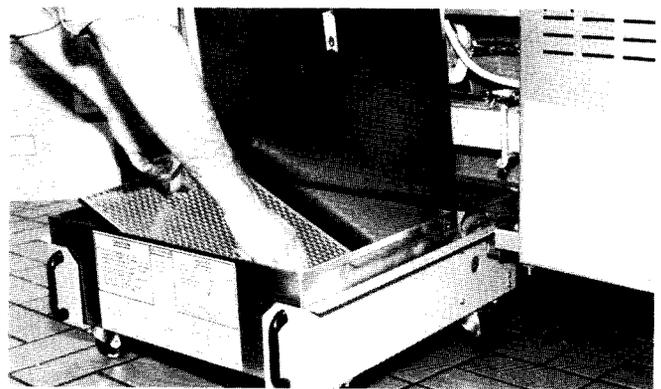


Fig. 17-6

6. Remove the screen and clean.

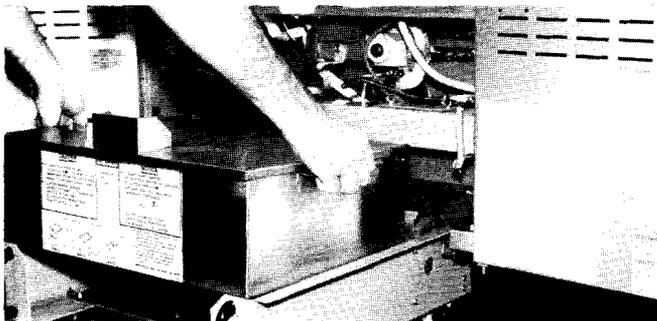


Fig. 17-7

7. Remove the filter/inner pan and clean (may be washed with hot water). Dry thoroughly then reinstall.

CAUTION: Never attempt to remove a filter pan containing hot cooking oil/shortening. Hot oil/shortening will flow through the outlet in the bottom of the pan and cause severe burns to feet and legs.

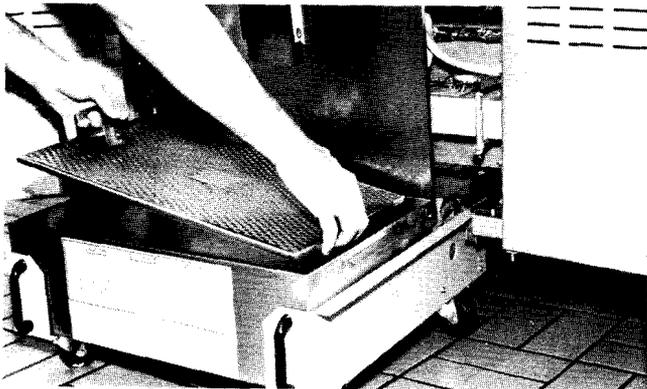


Fig. 17-8

8. Install the screen in the bottom of the filter pan.



Fig. 17-9

9. Position the paper on top of the pan with the edges evenly overlapping. Use the hold-down ring to push the paper to the bottom of the pan. Push down firmly to properly seat the paper.

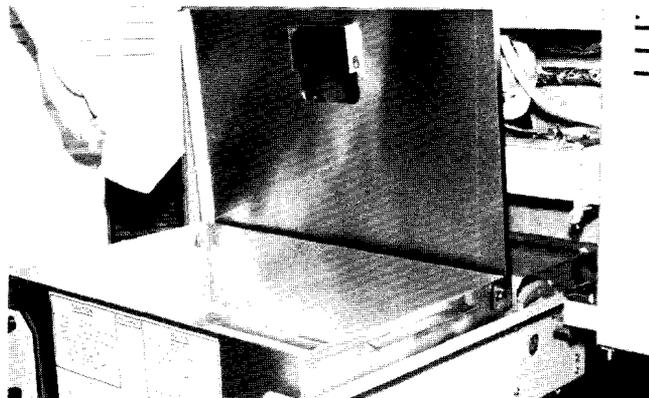


Fig. 17-10

10. Sprinkle filter powder on top of the paper according to the instructions on the package.

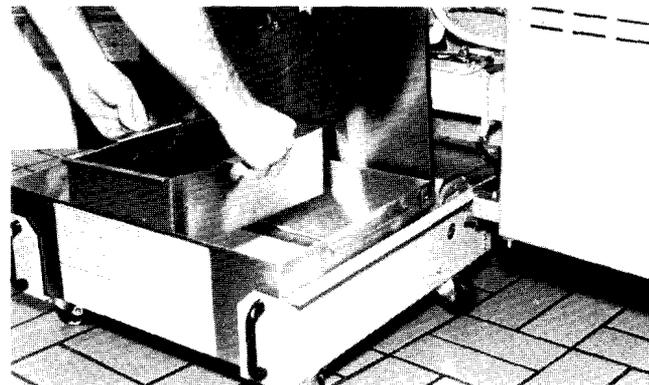


Fig. 17-11

11. Place the crumb tray in the filter pan.

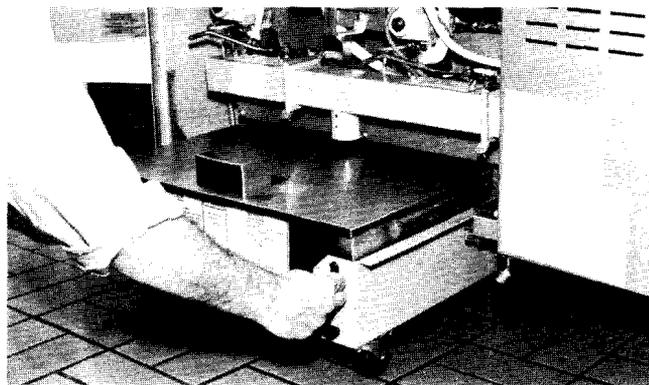


Fig. 17-12

12. *Footprint III* - Close cover and push filter carriage inside the fryer.

Filter Magic II - Roll filter assembly back into the fryer cabinet all the way. When the filter assembly is properly positioned, the green SYSTEM READY light located on the filter control panel will come on.

17.2. OPERATION OF THE FILTER UNIT:

CAUTION: Never operate the filter unit unless the cooking oil/shortening in the fryers has been brought up to cooking temperature.

NOTE: Skim large particles from shortening/oil before draining.

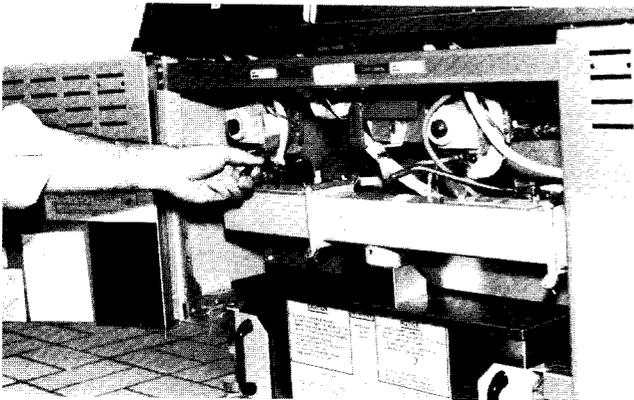


Fig. 17-13

13. Open the drain valve to the frypot you want to filter. The cooking oil/shortening will transfer from the frypot to the filter pan. If necessary, use the Fryer's Friend steel rod to clear the drain from the inside of the frypot.

NOTE: Exercise care when using the Fryer's Friend to prevent damage to the frypot and the drain valve. Do not drain more than one frypot at a time. To do so will cause overflowing of the filter pan.

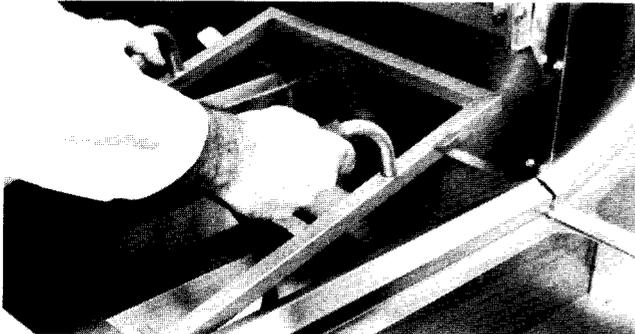


Fig. 17-14

14. Snap the power shower into the frypot connection.

WARNING: Except when using the rear flush option, do not operate without power shower. Hot cooking oil/shortening can splash and cause injury.

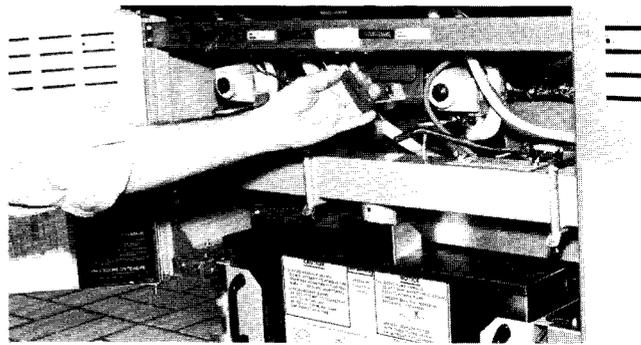


Fig. 17-15

15. For fryers with rear flush option, engage the control lever to select rear flush. This will wash sediment from the bottom of the frypot.

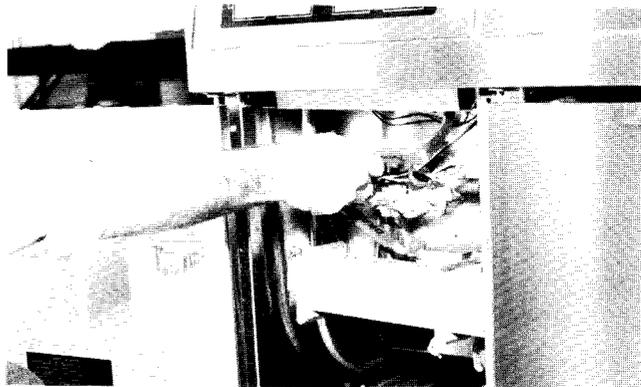


Fig. 17-16

16. Push the filter handle to start the filter pump. **NOTE:** There may be a 5 second delay before the pump activates.

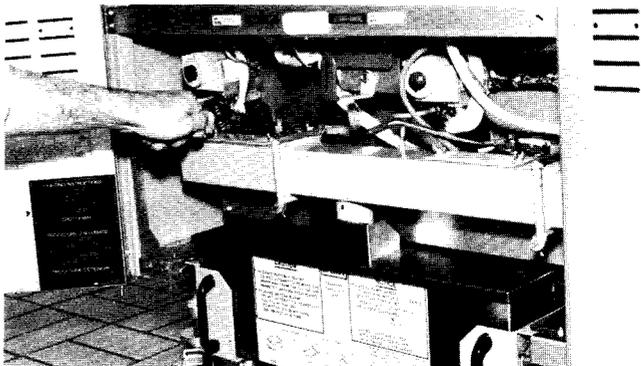


Fig. 17-17

17. When the oil/shortening and frypot are clean, close the drain valve to refill the frypot. Allow the filter pump to run 10 to 12 seconds after bubbles appear in the oil/shortening to clear the oil return lines and to prevent hardening in the lines

NOTE: Filter pump is equipped with a manual reset switch in case the filter motor overheats or an electrical fault occurs.

WARNING: Turn off power to the filter system and allow pump motor to cool 20 minutes before attempting to reset switch on the pump motor

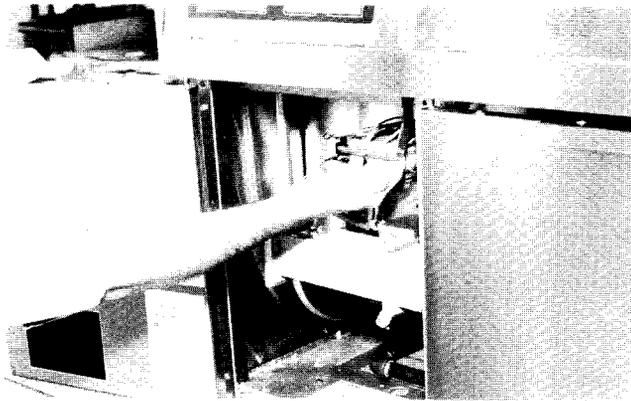


Fig. 17-18

18. Pull the filter handle to stop the filter pump
Remove the power shower.

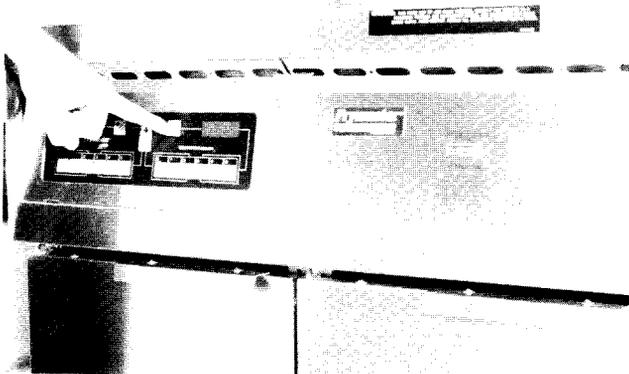


Fig. 17-19

19. Make sure the drain valve is fully closed. Turn the fryer ON and allow the cooking oil/shortening temperature to reach set point.

18. CARE AND CLEANING OF YOUR FILTER SYSTEM

CAUTION: Never operate the filter system without cooking oil/shortening in the system.

WARNING: NEVER use the filter pan to dispose or transport old cooking oil/shortening to the disposal area. ALWAYS allow cooking oil/shortening to cool below 100°F (38°C) before transporting to the disposal area. A Shortening Disposal Unit (SDU), available from

your local distributor, is available and highly recommended for safety.

1. Do not drain water into the filter pan. Water will damage the filter pump. Perform the following to drain the frypot:

a. *Footprint III*

- 1) Pull the filter carriage forward.
- 2) Remove the empty filter pan assembly.
- 3) Push the filter carriage back into the fryer.
- 4) Place suitable container under the drain.
- 5) Open the drain valve.

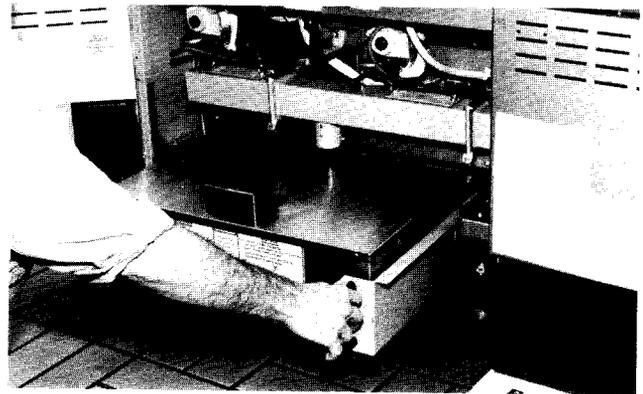


Fig. 18-1

b. *Filter Magic II*

- 1) Remove the filter unit from the cabinet.
 - 2) Place suitable container under the drain.
 - 3) Open the drain valve.
2. Replace o-ring(s) when the filter system pumps cooking oil/shortening slowly or not at all (with new filter paper).

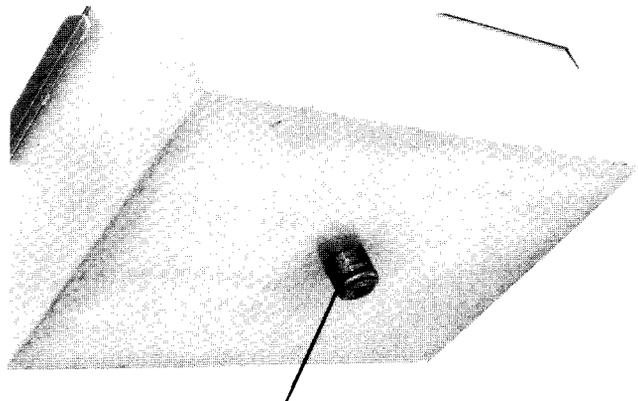


Fig. 18-2

- a. *Footprint III* - the o-ring is on the bottom of the filter pan.
- b. *Filter Magic II* - o-rings are on bottom of pan and on the pump fitting.

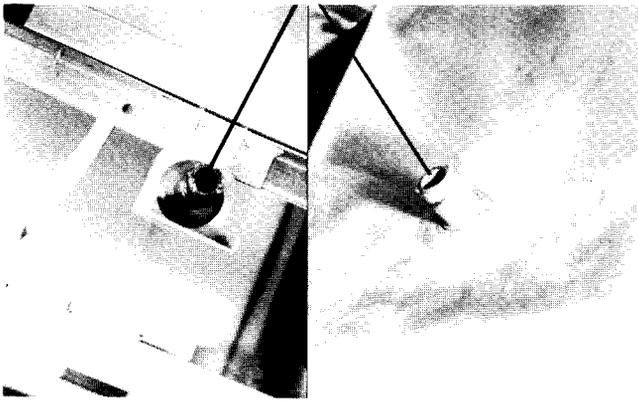


Fig. 18-3

3. Immediately after use, drain the power shower completely. If you suspect blockage, unscrew the plugs at each corner of the power shower frame. Use a long narrow bottle brush with hot water and detergent to clean the inside of the power shower. Rinse, dry thoroughly, and reinsert plugs before using.



Fig. 18-4

4. *Filter Magic II* - Periodically clean outer filter pan as follows:
 - a. Pour 1 quart (1 liter) of warm water mixed with grease-cutting detergent into the pan. Scrub the pan thoroughly **INSIDE ONLY** with the pot brush until clean.
 - b. Pour the solution from the outer pan into the kitchen drain or sink.
 - c. Rinse with clean water and drain into kitchen drain or sink.
 - d. Turn the pan upside down and slightly elevate on sink drain board to **allow all water to drain from suction tube.**
 - e. Wipe inside and outside with a clean, dry cloth or paper towels.

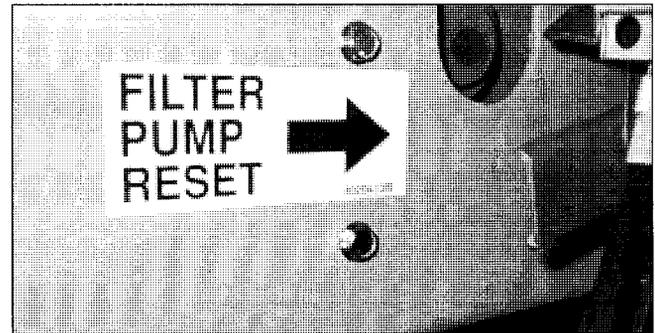
18.1. Filtration Problems

One of the most common errors is placing the filter paper on the bottom of the filter pan rather than over the filter screen.

Whenever the complaint is "the pump is running, but no oil is being filtered," check the installation of the filter paper, and ensure that the correct size is being used. While you are checking the filter paper, verify that the o-ring on the bottom of the filter pan is present and in good condition. A missing or worn o-ring allows the pump to suck air and decrease its efficiency.

For Filter Magic Systems, if the pump motor does not start, the most likely cause is that the filter carriage is not properly positioned all the way to the rear of the fryer.

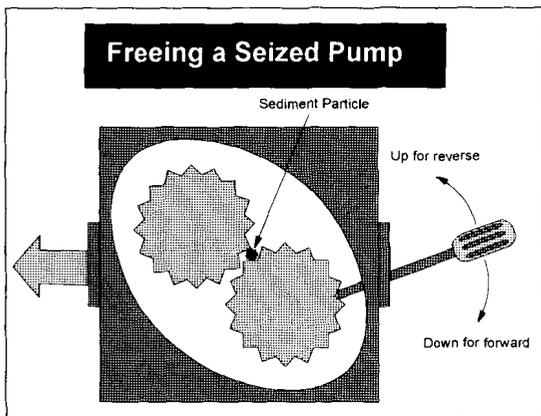
If the pump motor overheats, its thermal overload will trip and the motor will not start until it is reset. If the pump motor does not start, press the red reset switch located on the rear of the motor.



If the pump then starts, something caused the motor to overheat. It may be that several frypots were being filtered one after the other and the pump got hot. Letting the pump cool down for at least a half-hour is all that is required in this case. More often, the pump overheated for one of the following reasons:

- Shortening solidified in the pan or filter lines.
- The operator attempted to filter oil or shortening that was not heated. Cold oil and shortening are thicker and cause the pump motor to work harder and overheat.

If the pump and motor will not turn and you hear a humming sound just before the overload trips, there is a blockage in the pump. Incorrectly sized or installed paper will allow food particles and sediment to pass through the filter pan and into the pump. When sediment enters the pump, the gears can bind up causing the motor to overload, again tripping the thermal overload. Solidified shortening in the pump will also cause it to seize, with the same result.



A pump seized by debris or hard shortening can usually be freed by manually moving the gears with a screwdriver or other instrument.

1. Disconnect power to the filter system.
2. Remove the input plumbing from the pump.
3. Use a screwdriver to manually turn the gears.
 - Turning the pump gears backward will release a hard particle.
 - Turning the pump gears forward will push softer objects and solid shortening through the pump and allow free movement of the gears.

Incorrectly sized or installed paper will also allow food particles and sediment to pass through and clog the suction tube on the bottom of the filter carriage. Particles large enough to block the suction tube may indicate that the crumb tray is not being used.

Pan blockage can also occur if shortening is left in the pan and allowed to solidify. The heater strip on the suction tube is designed to prevent solidification of residual shortening left in the tube. It will not melt or prevent solidification of shortening in the pan.

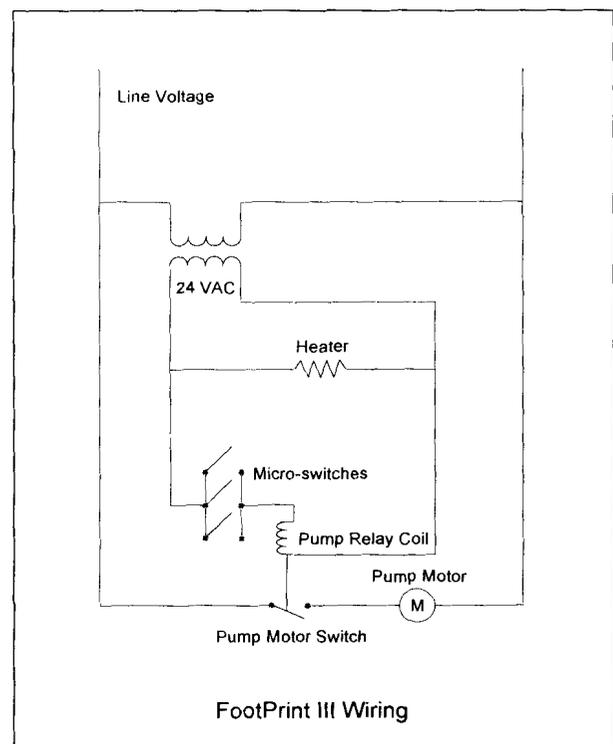
Blockage removal can be accomplished by forcing the item out with an auger or drain snake.

Compressed air or other pressurized gases should not be used to force out the blockage.

Possible problems with the Power Shower include clogged openings, shortening solidified in the tubes, missing clean-out plugs, and missing or worn O-rings. Cleaning the unit and replacing missing plugs and missing or worn O-rings will correct these problems.

The electronics of the filter system are simple and straightforward. Microswitches, attached to handles for each vat and wired in parallel, provide the 24 VAC required to activate the pump relay coil when the handles are moved to the ON position. The activated pump relay coil pulls in the pump motor switch, supplying power to the pump motor.

The suction tube heater and flexible hose heater are wired directly into the 24 VAC source. They remain energized as long as the unit is plugged in.



19.BUILT-IN FILTER SYSTEM TROUBLESHOOTING GUIDE

Directions for Troubleshooting Flow Chart

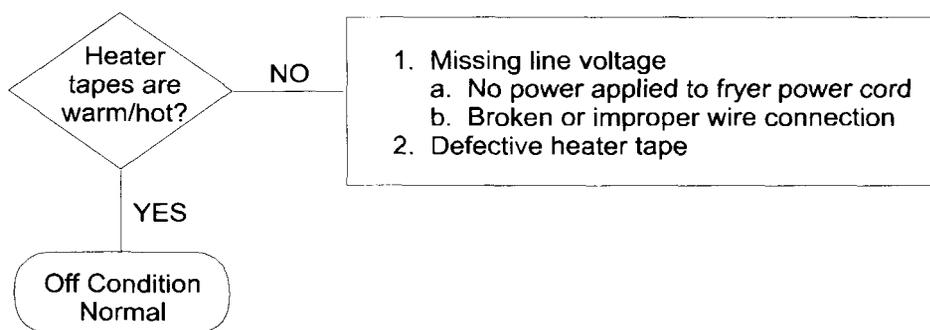
1. Perform the test set-up at the beginning of each condition.
2. **Normal operation** ("yes" after each decision block) flows down the page in sequence.
3. **Abnormal operation** (a "no" answer) branches to the right side of the page where you will find the steps for problem resolution.

Always start at the first condition and follow each step *in sequence*.

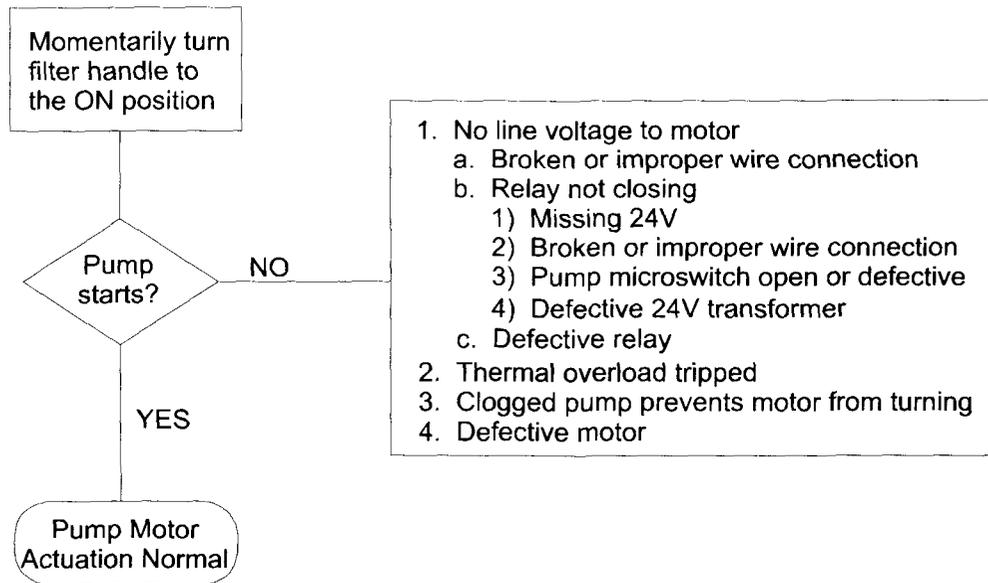
WARNING: Inspection, testing and repair of electrical equipment should be performed by qualified service personnel. Unplug the unit before servicing, except when electrical tests are required.

DANGER: Use extreme care during electrical circuit tests. Live circuits will be exposed.

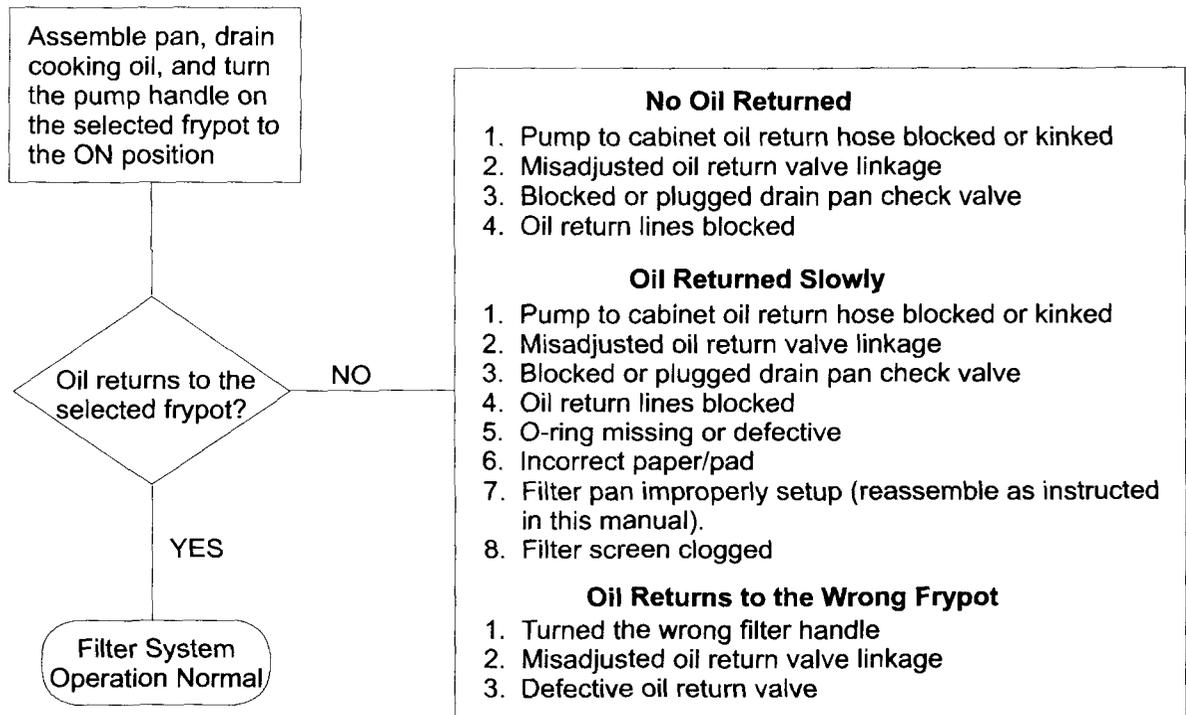
Off Condition



Pump Motor Actuation



Filter System Operation



20. BASKET LIFTS

20.1. INSTALLATION INSTRUCTIONS

For convenience in shipping your fryer, the basket hanger assemblies are shipped in the down position. Before starting your fryer, ensure the basket lift arms are installed. For fryers equipped with computers or basket lift timers, basket lift rods will come up automatically when unit is plugged into electrical outlet.

20.2. OPERATING INSTRUCTIONS

Fryers Equipped with Computers or Basket Lift Timer Controllers:

After the fryer has reached the programmed cooking temperature, press the desired product button(s) on the computer or basket lift timer controller. The basket(s) will be lowered into the cooking oil/shortening. At the completion of the timed cycle, the baskets will automatically be raised. To repeat the cycle, simply depress the desired product button to lower the baskets.

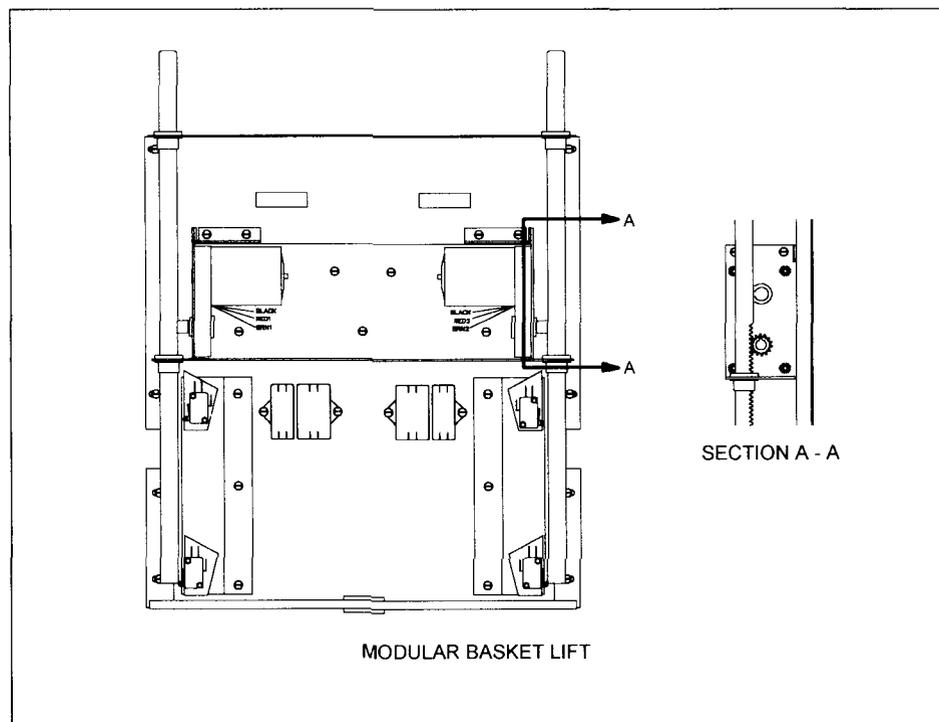
To change the time cycle on fryers equipped with Computer or Basket Lift Timer Controller, refer to

the *Computer Programming* Section or the *Timer Control Panel* Section of this manual.

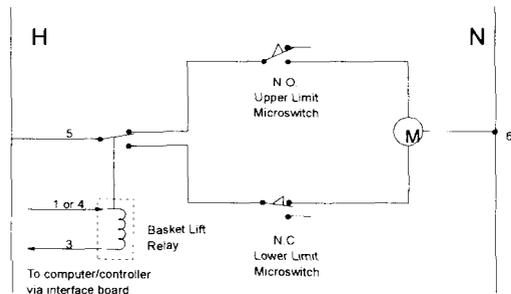
20.3. TROUBLESHOOTING

Common electric fryers may optionally be equipped with automatic basket lifts. The lifts may be configured for control via a Basket Lift Timer or Computer Magic III computer. Basket lifts will always come in pairs, although each operates independently.

A lift consists of a toothed rod to which the basket lift arm is attached, a reversible-drive gear motor, and a pair of roller-activated microswitches. The gear motor engages the teeth in the rod, moving it up or down depending upon the direction of rotation of the motor. Microswitches at the upper and lower limits of movement stop the motor when the basket is in the full up or full down position.



Computer/Controller Modular Basket Lift Simplified Schematic



When the product button is pushed on the computer/controller, current flows through a coil in the basket lift relay, causing the lower circuit to be activated. This causes the basket lift to be lowered, closing the normally open upper microswitch. When the lower normally closed microswitch is opened by the downward moving basket lift rod, power to the motor is cut. When the computer/controller times-out, the current to the relay coil is cut, allowing the upper circuit to be activated. This causes the basket lift to be raised, reclosing the lower microswitch. When the basket lift rod clears the upper microswitch, allowing it to reopen, power to the circuit is cut and the motor stops. Pushing the product button again restarts the cycle.

The specific cook times (and other settings) are programmed into the computer or controller by the operator. When the product button is pressed, the timing circuitry activates a coil in the basket lift relay to supply power to the lower microswitch. The microswitches stop the motor at the lift's upper and lower travel limits and reverse the direction of current flow thus reversing the motor direction.

Problems with the basket lift system can be grouped into three categories:

- Binding/jamming problems
- Motor and gear problems
- Electronics problems

BINDING/JAMMING PROBLEMS

Noisy, jerky or erratic movement of the lifts is usually due to lack of lubrication of the rods and their bushings. Apply a light coat of Lubriplate™ or similar lightweight white grease to the rod and bushings to correct the problem.

Another possible cause of binding is improper positioning of the motor, which prevents the gear from correctly engaging the teeth in the rod. To correct the problem, loosen the screws that hold the motor in place and move it forward or

backward until the rod has just enough slack to be rotated slightly.

MOTOR AND GEAR PROBLEMS

Failure to keep the lift rod and bushings properly lubricated will cause unnecessary wear of the gear. The problem is corrected by replacing the worn gear.

If the lift cycles correctly but fails to remain in the up position (goes up, but then slowly settles back down into the frypot), the problem is a failed motor brake. A failed motor brake cannot be repaired and requires replacement of the motor itself.

If power is reaching the motor but the motor fails to run, the motor is burned out and must be replaced.

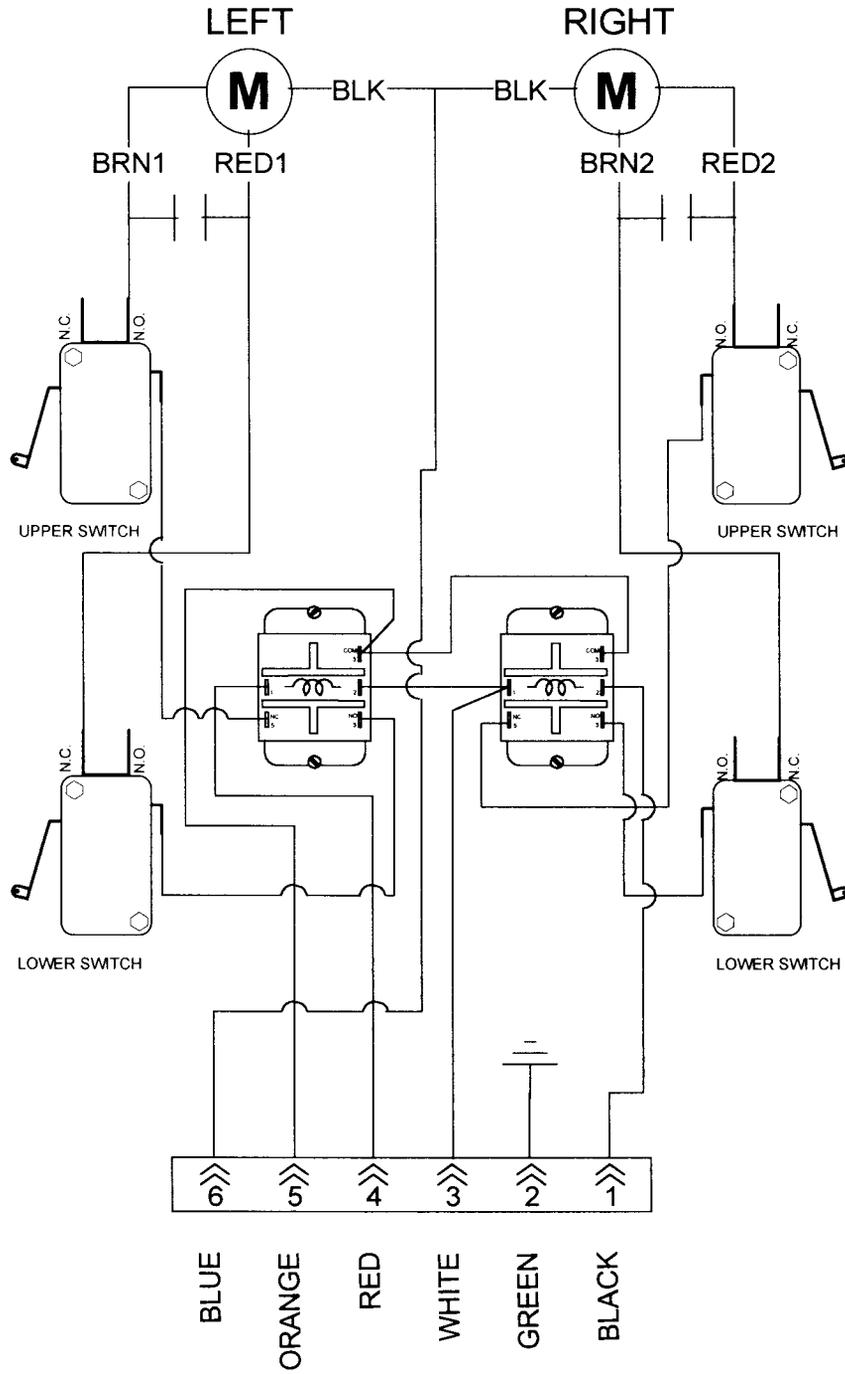
ELECTRONICS PROBLEMS

This category encompasses problems with the relays, microswitches, capacitors, resistors, interface board, wiring, and controls.

Troubleshooting the electronics of the modular basket lift is simply a process of verifying current flow through the individual components up to and including the motor. Using a multimeter set to the 250 VAC range, check the connections on both sides of the component for the presence of 120 VAC. The simplified wiring diagrams on the following pages identify the components and wiring connection points.

Computer/Controller Modular Basket Lift Simplified Wiring Diagram

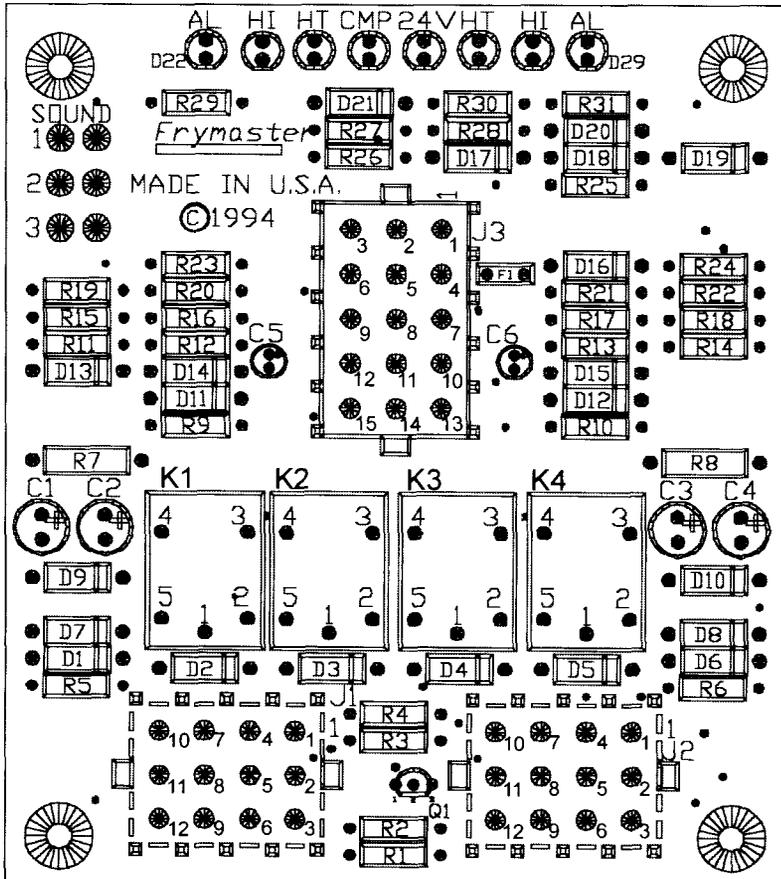
NOTE: References to right and left are from rear of fryer.



21. WIRING DIAGRAMS

Electric Interface Board Diagnostic Chart

The following diagram and charts provide ten quick system checks that can be performed using only a multimeter.



Note: The sealed relays are not replaceable. If a relay fails the interface board must be replaced.

Diagnostic LED Legend

- CMP indicates power from 12V transformer
- 24 indicates power from 24V transformer
- HI (RH) indicates output (closed) from right Latch relay
- HI (LH) indicates output (closed) from left Latch relay
- HT (RH) indicates output from right Heat relay
- HT (LH) indicates output from left Heat relay
- AL (RH) indicates output (open) from right Latch relay
- AL (LH) indicates output (open) from left Latch relay

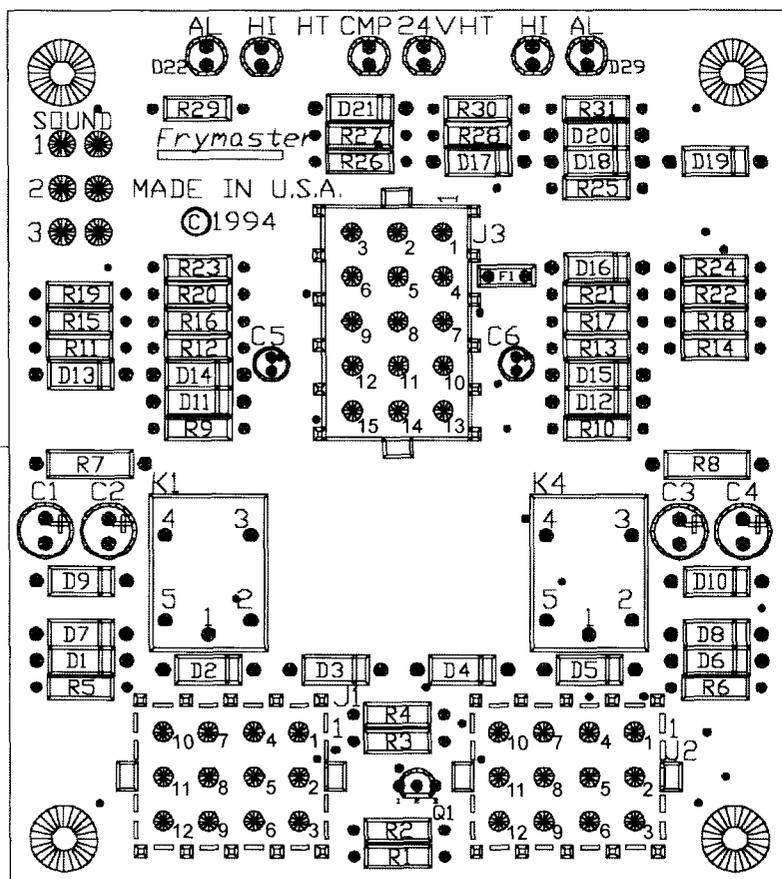
Meter Setting	Test	Pin	Pin	Results
12 VAC Power	50 VAC Scale	1 of J2	3 of J2	12-16 VAC
24 VAC Power	50 VAC Scale	2 of J2	Chassis	24-30 VAC
*Probe Resistance (RH)	R X 1000 OHMS	11 of J2	12 of J2	See Chart
*Probe Resistance (LH)	R X 1000 OHMS	3 of J1	2 of J1	See Chart
Hi-Limit Continuity (RH)	R X 1 OHMS	7 of J2	4 of J2	0 - OHMS
Hi-Limit Continuity (LH)	R X 1 OHMS	4 of J1	7 of J1	0 - OHMS
Latch Contactor Coil (RH)	R X 1 OHMS	8 of J2	Chassis	3-10 OHMS
Latch Contactor Coil (LH)	R X 1 OHMS	5 of J1	Chassis	3-10 OHMS
Heat Contactor Coil (RH)	R X 1 OHMS	9 of J2	Chassis	18-25 OHMS
Heat Contactor Coil (LH)	R X 1 OHMS	6 of J1	Chassis	18-25 OHMS

*Disconnect 15-Pin harness from the computer/controller before testing the probe circuit.

Electric Interface Board

Diagnostic Chart EPRI Common Electric Fryers

The following diagram and charts provide eight quick system checks that can be performed using only a multimeter.



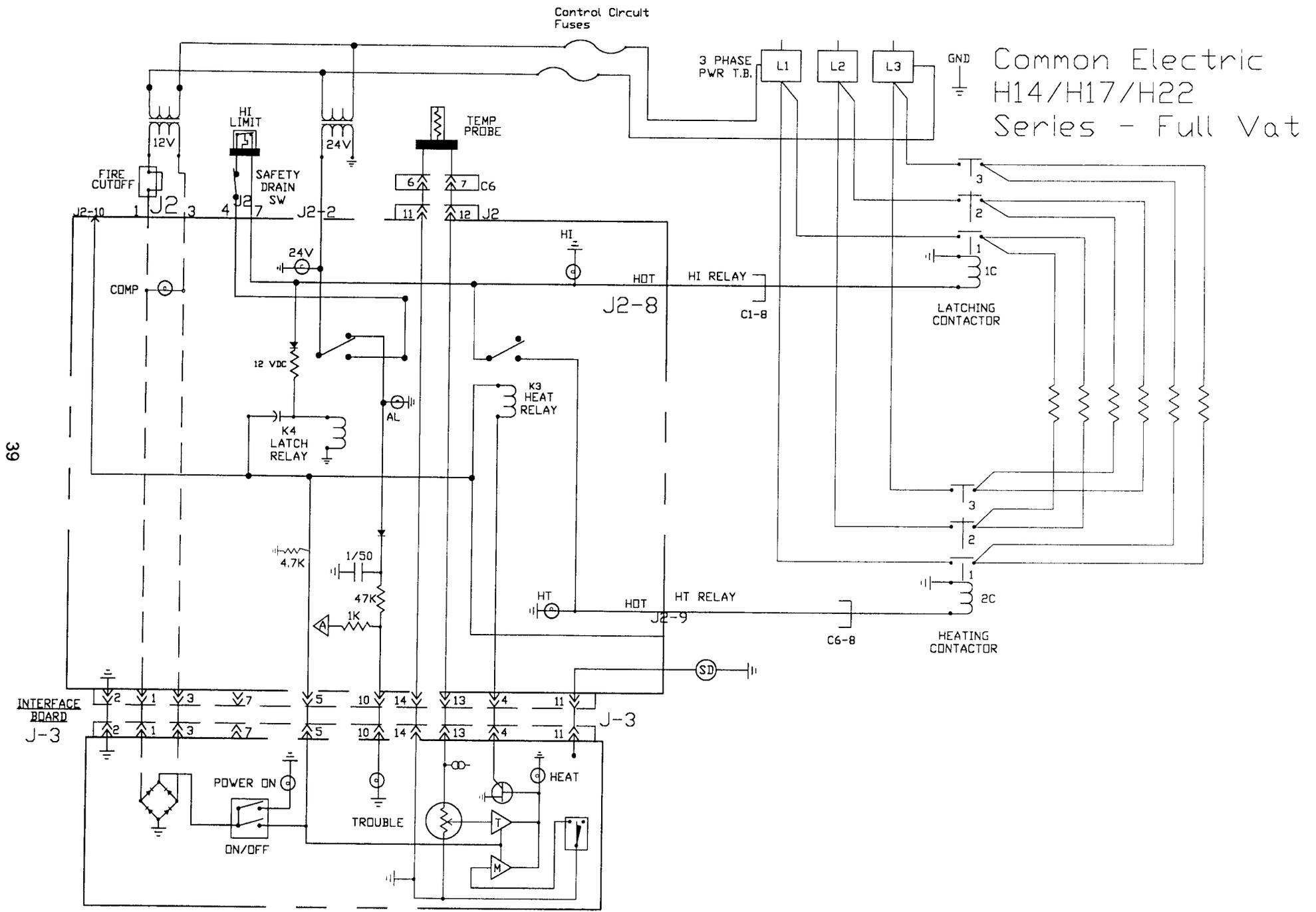
Note: The sealed relays are not replaceable. If a relay fails the interface board must be replaced.

Diagnostic LED Legend

CMP	indicates power from 12V transformer
24	indicates power from 24V transformer
HI	(RH) indicates output (closed) from right Latch relay
HI	(LH) indicates output (closed) from left Latch relay
HT	Not used
HT	Not used
AL	(RH) indicates output (open) from right Latch relay
AL	(LH) indicates output (open) from left Latch relay

Meter Setting	Test	Pin	Pin	Results
12 VAC Power	50 VAC Scale	1 of J2	3 of J2	12-16 VAC
24 VAC Power	50 VAC Scale	2 of J2	Chassis	24-30 VAC
*Probe Resistance (RH)	R X 1000 OHMS	11 of J2	12 of J2	See Chart
*Probe Resistance (LH)	R X 1000 OHMS	3 of J1	2 of J1	See Chart
Hi-Limit Continuity (RH)	R X 1 OHMS	7 of J2	4 of J2	0 - OHMS
Hi-Limit Continuity (LH)	R X 1 OHMS	4 of J1	7 of J1	0 - OHMS
Latch Contactor Coil (RH)	R X 1 OHMS	8 of J2	Chassis	3-10 OHMS
Latch Contactor Coil (LH)	R X 1 OHMS	5 of J1	Chassis	3-10 OHMS

*Disconnect 15-Pin harness from the computer/controller before testing the probe circuit.

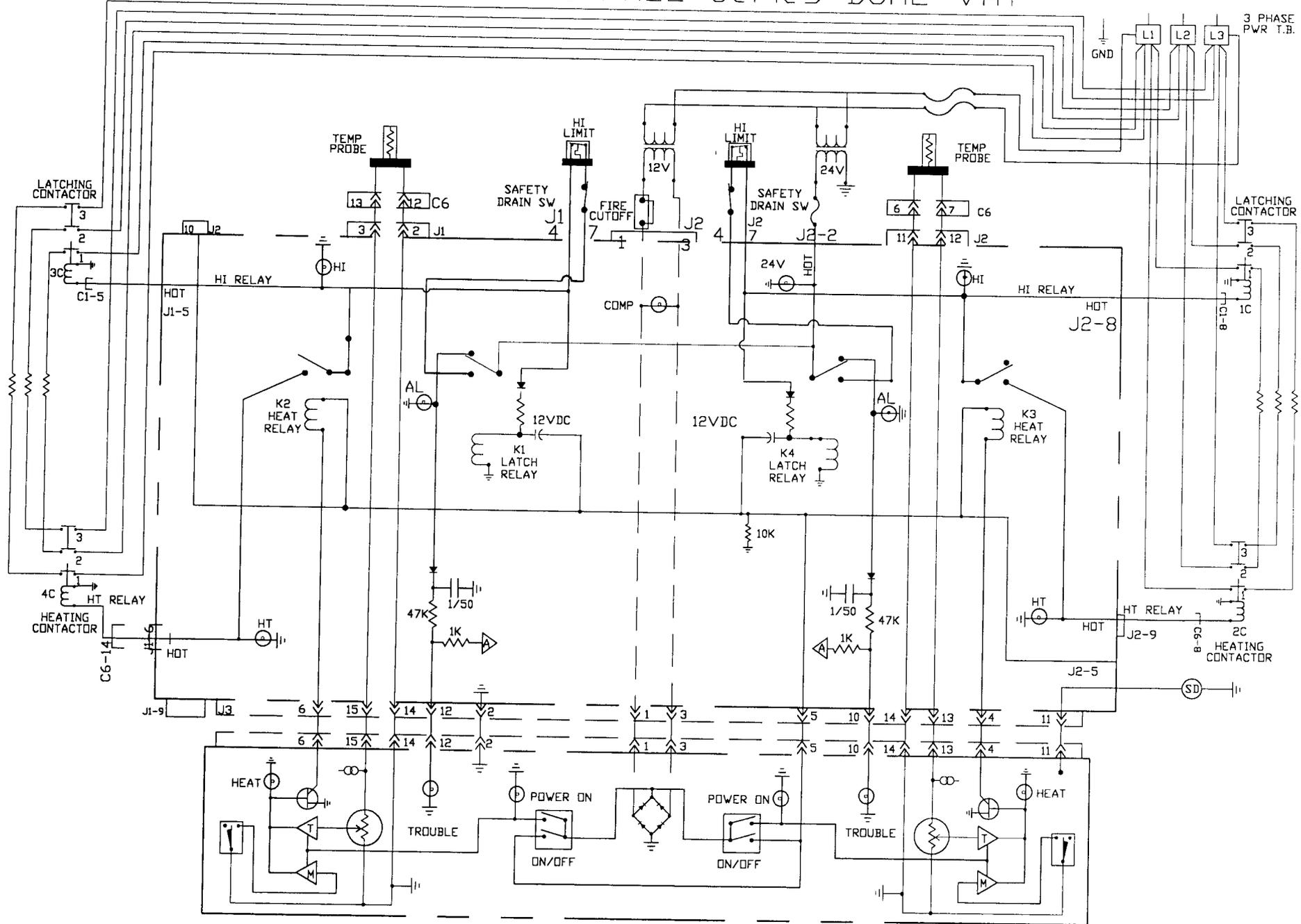


Common Electric
H14/H17/H22
Series - Full Vat

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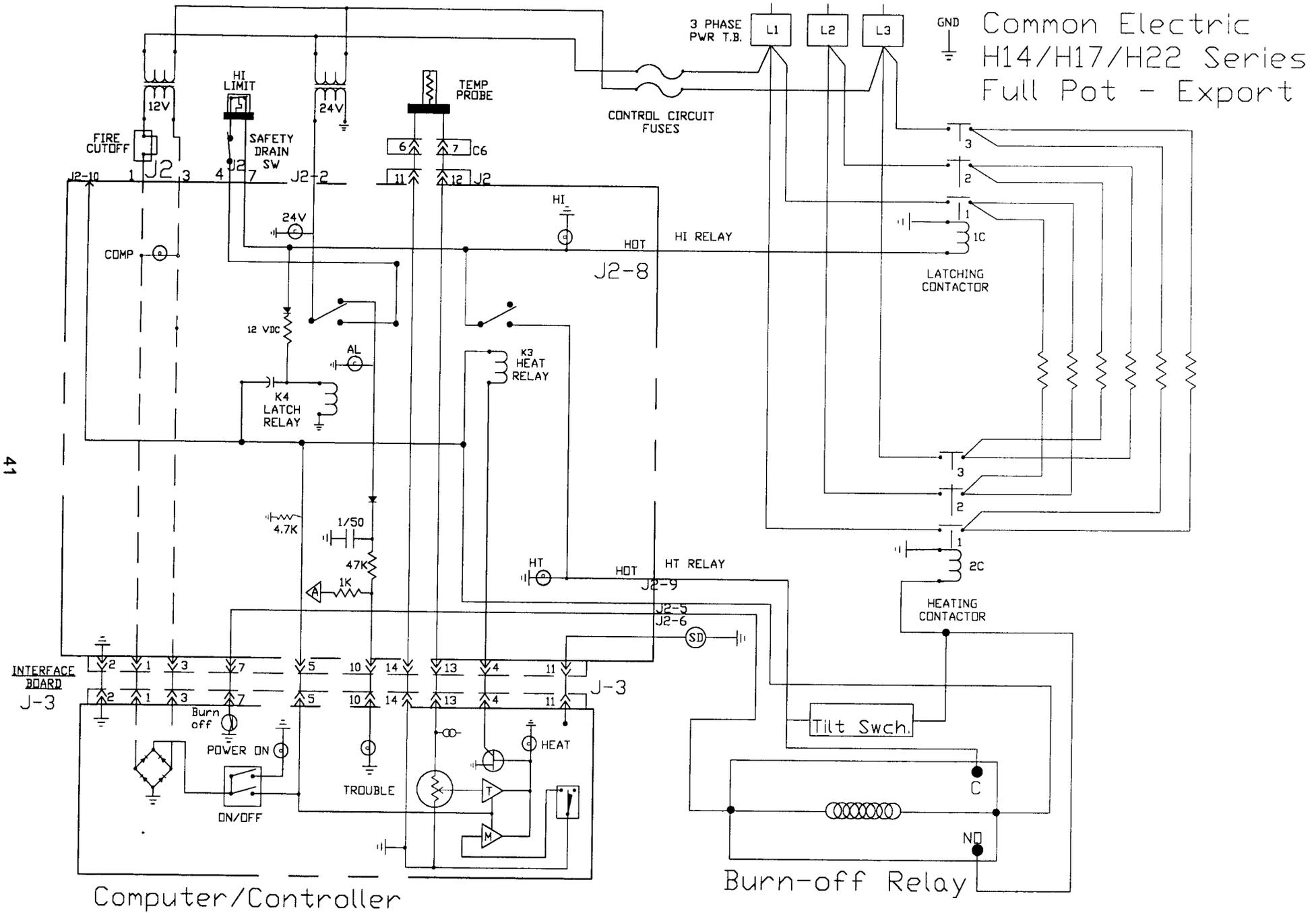
Computer/Controller

Common Electric H14/H17/H22 Series DUAL VAT



Computer/Controller

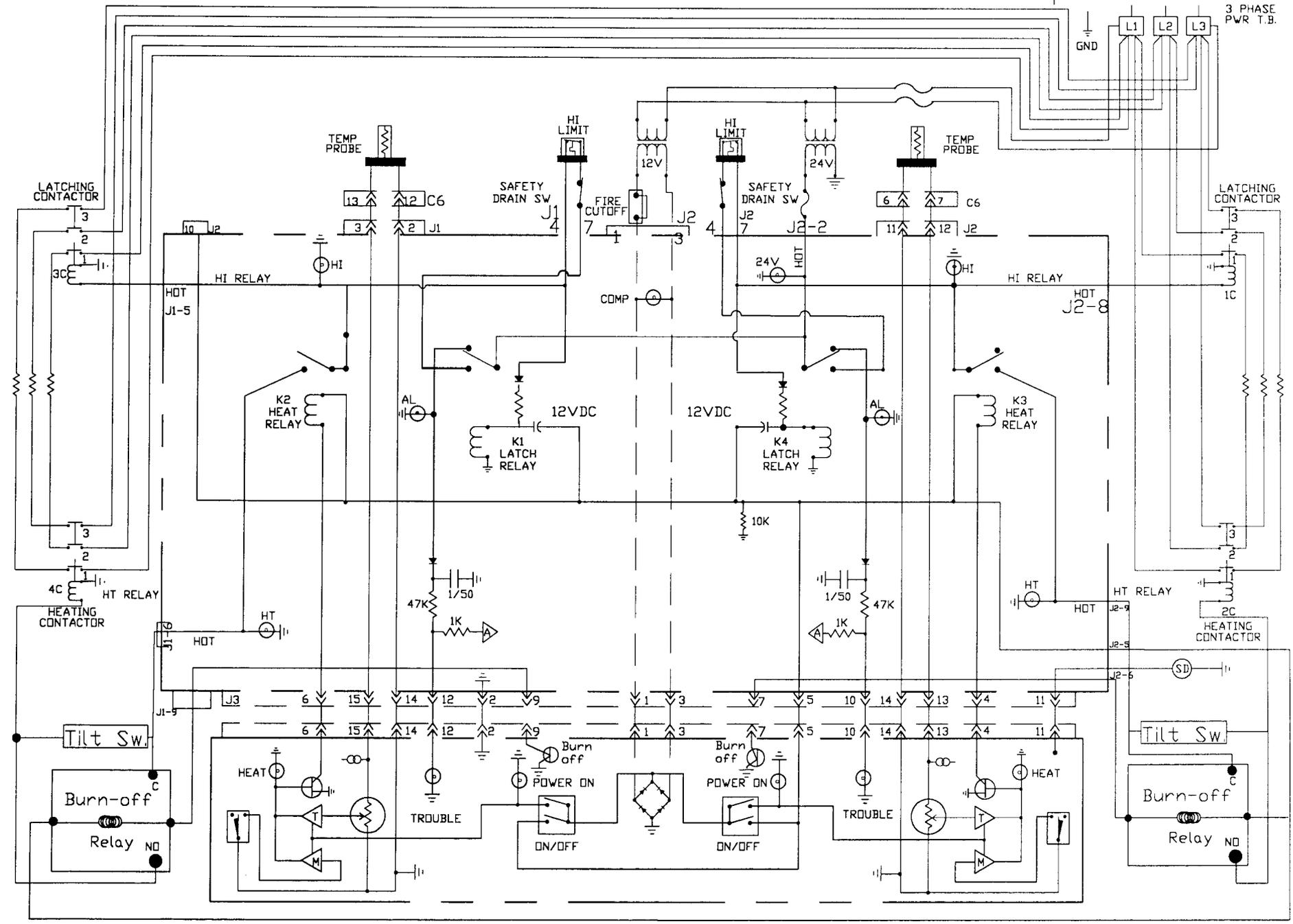
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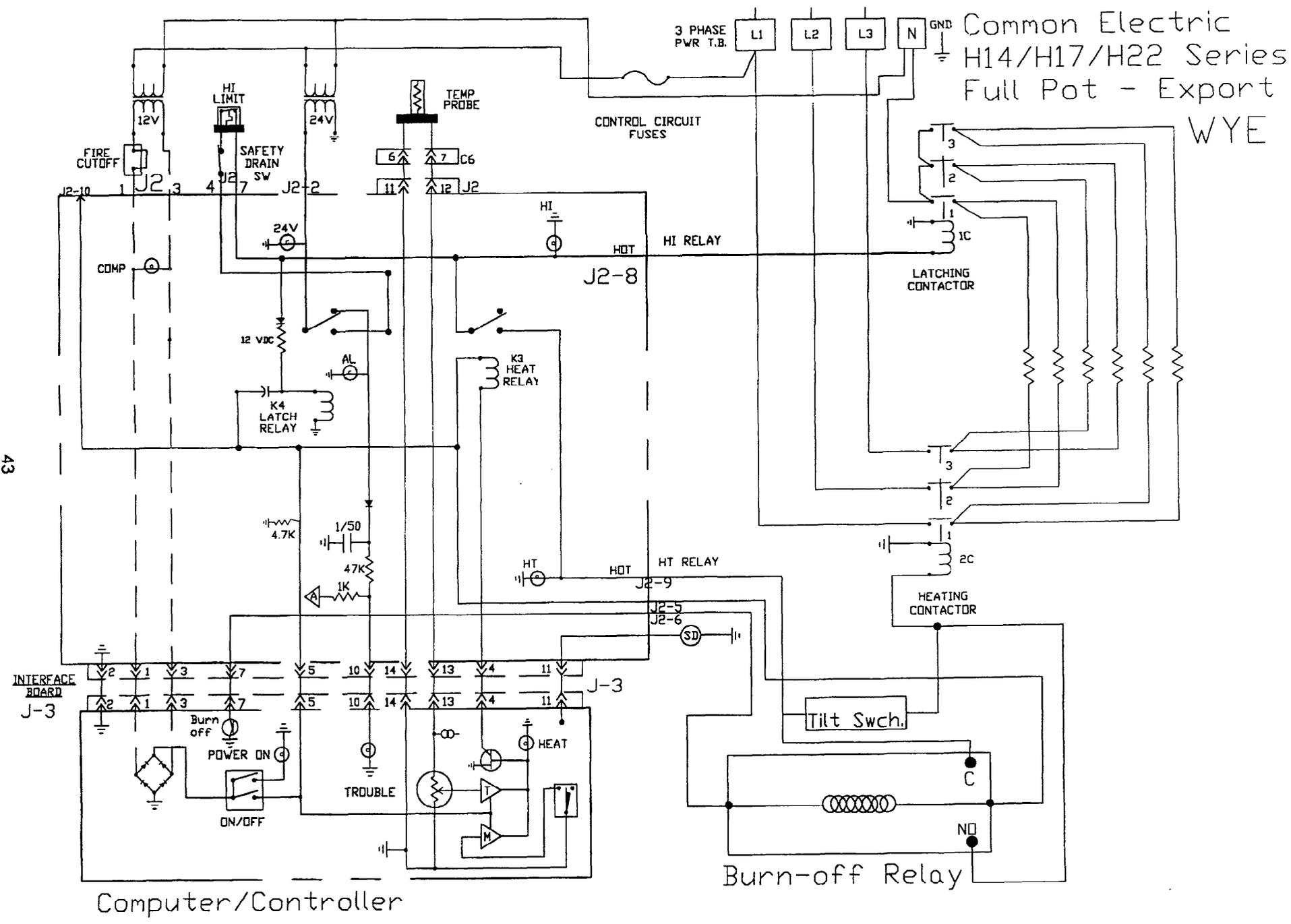
41

Common Electric H14/H17/H22 Series Dual - Export

42



Computer/Controller



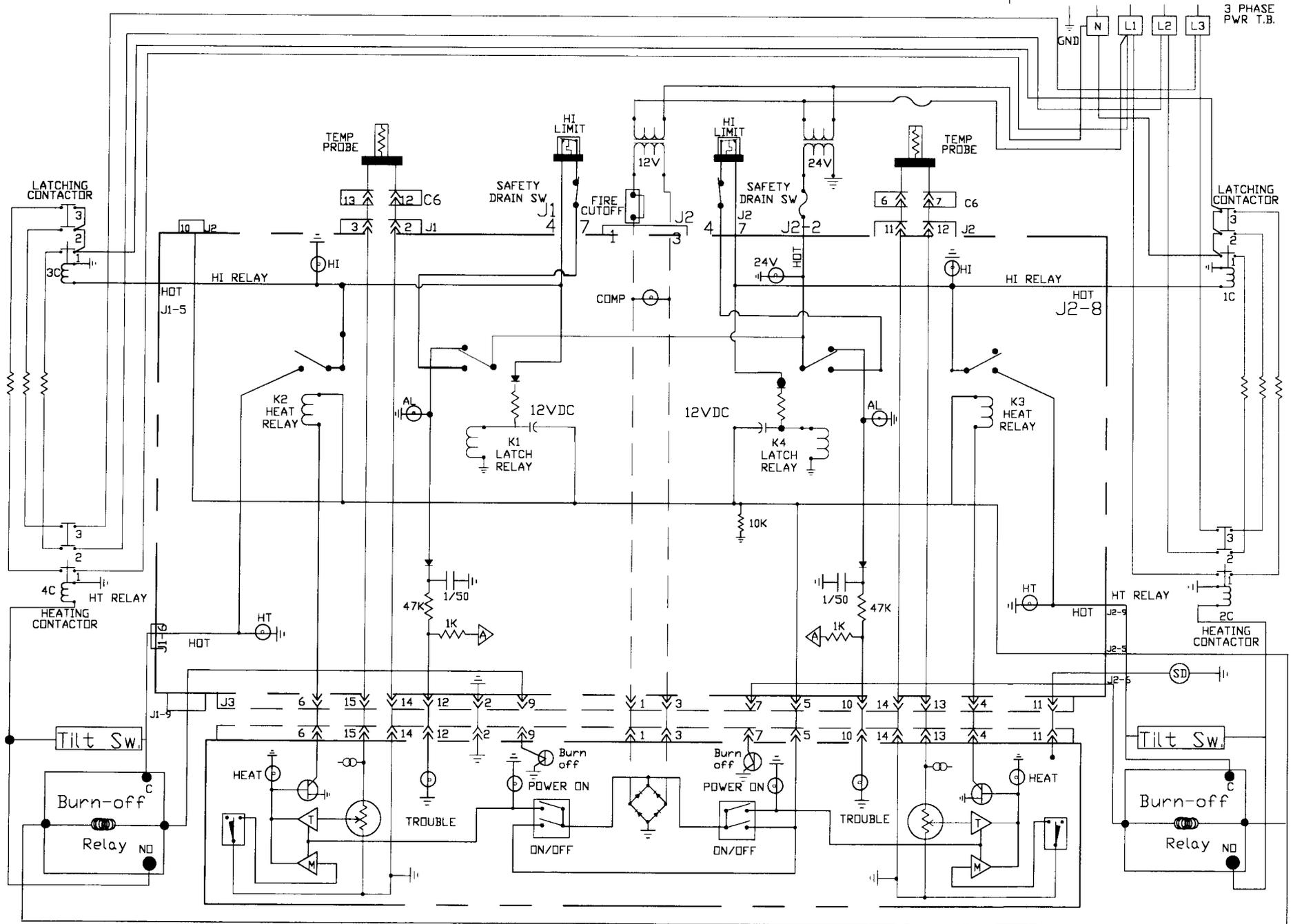
Common Electric
H14/H17/H22 Series
Full Pot - Export
WYE

43

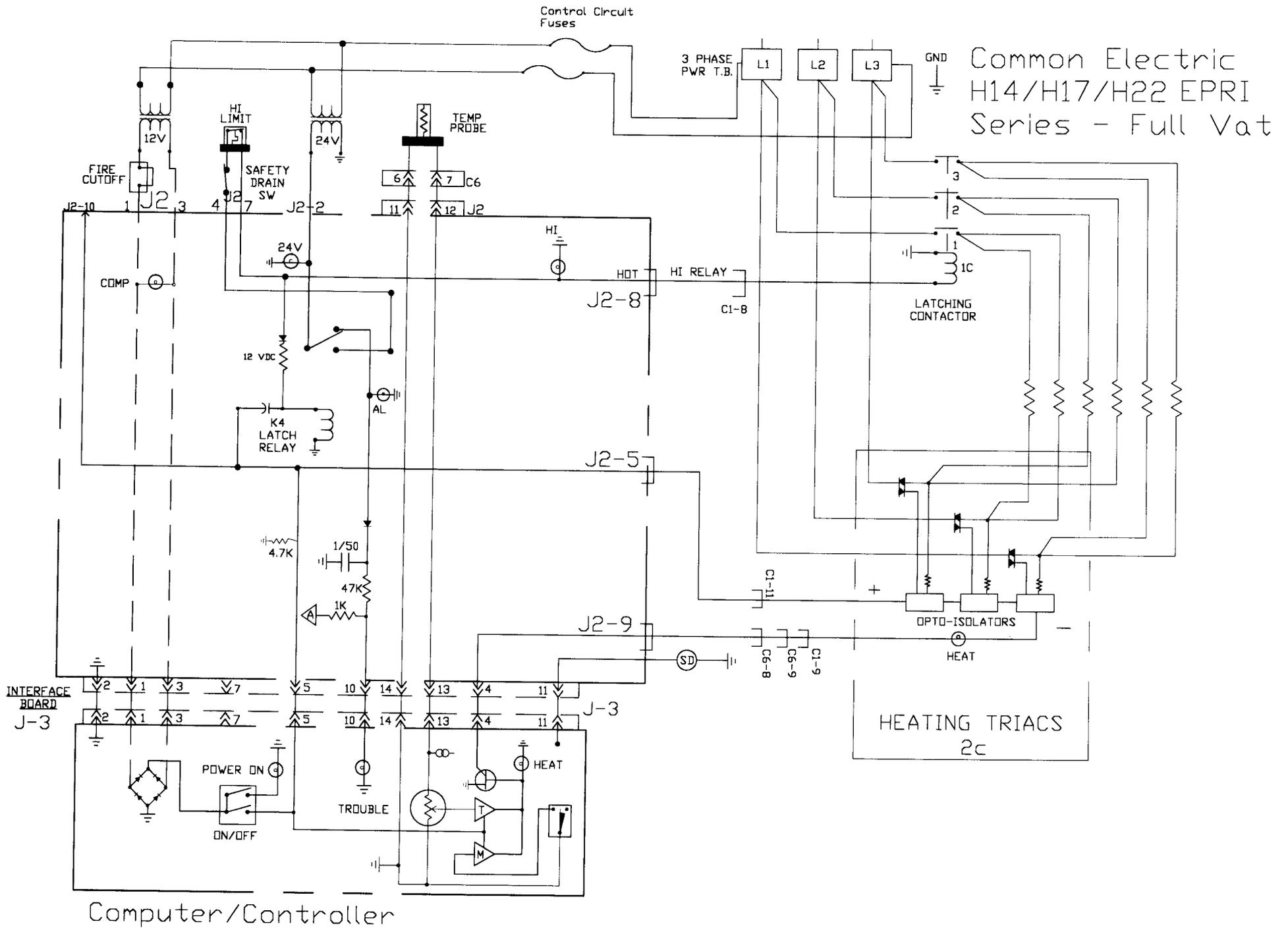
Computer/Controller

Burn-off Relay

Common Electric H14/H17/H22 Series Dual - Export WYE



Computer/Controller

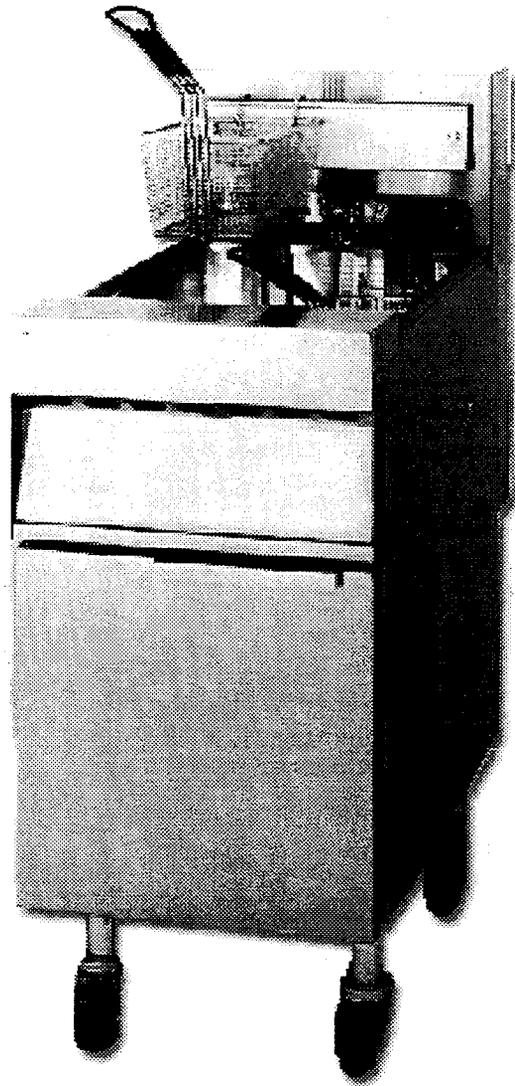


Common Electric
H14/H17/H22 EPRI
Series - Full Vat

Computer/Controller

Frymaster[®]

Common Electric



Parts Catalog

The Frymaster Corporation, 8700 Line Avenue 71106, P.O. Box 51000, Shreveport, Louisiana 71135-1000
318-865-1711 FAX 318-862-2394

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Common Electric Parts Catalog

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Filter Magic

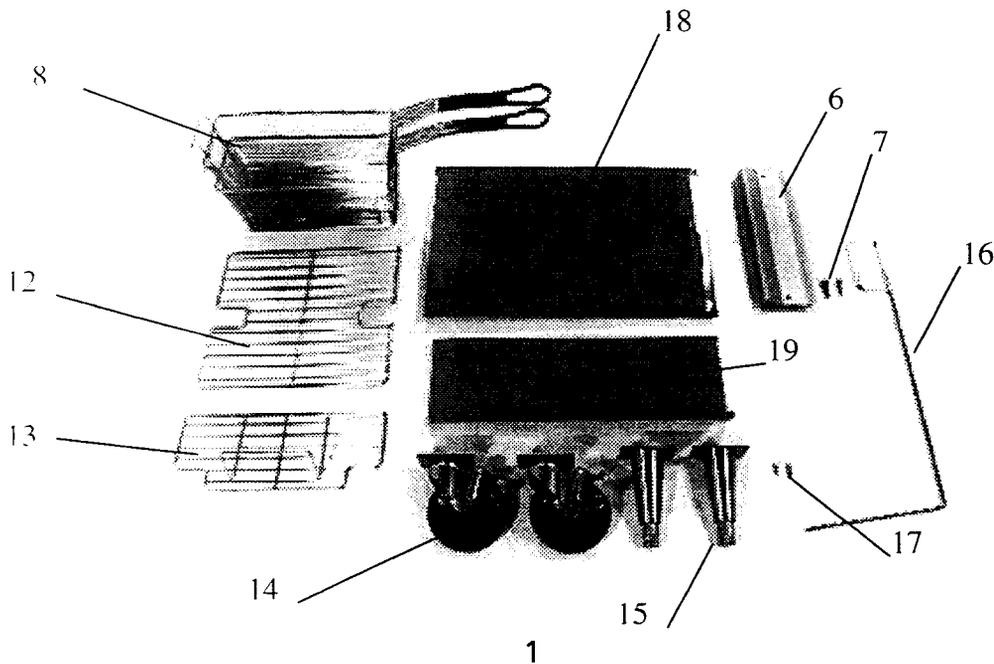
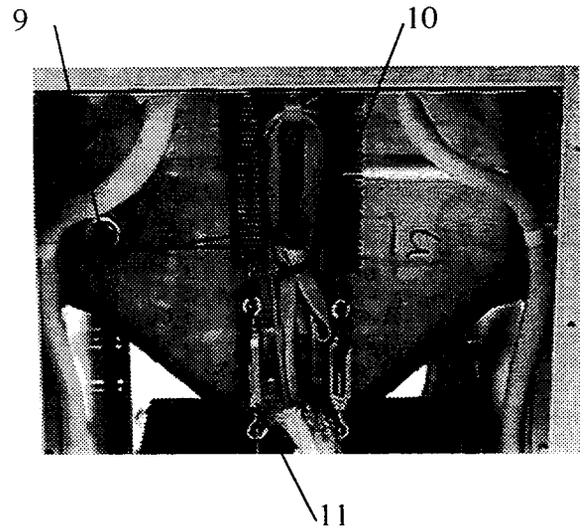
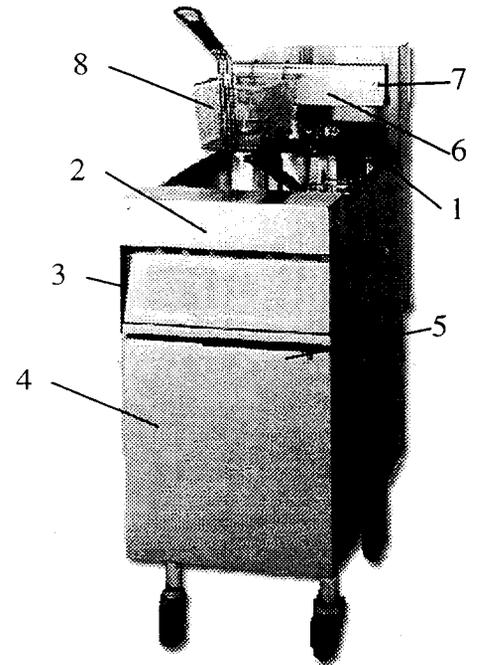
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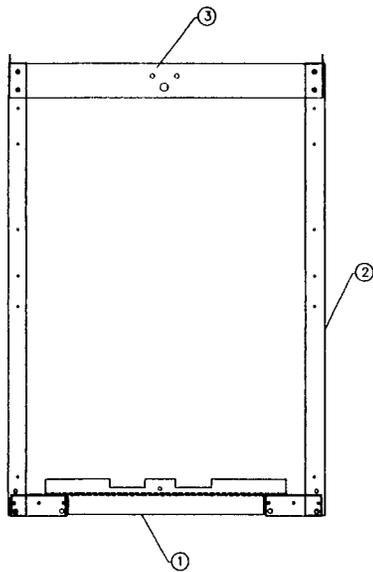
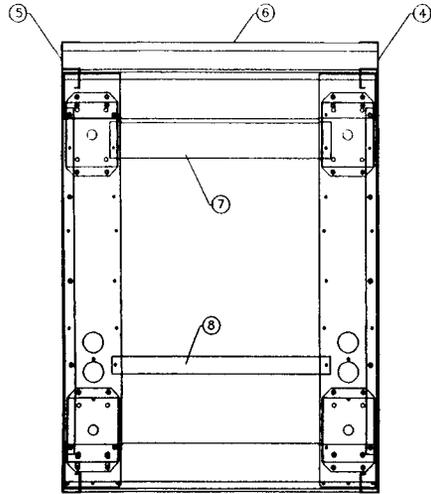
Basket Lift Systems

#	Description	Single	Double	Triple	Quad
1	Tilt Housing	824 0532	824 0534	824 0535	824 0536
2	Top Cap (FP)	824 0572	824 0571	824 0573	824 0574
2	Top Cap	824 0877	824 0575	824 0576	824 0578
2	Cap and Splash	826 1223	826 1222	826 1221	826 1220
3	Control Panel	806 7171	806 7172	806 7173	806 7174
*	Center Back Cover	900 5141	900 5143	900 5145	900 5147
*	Lower Back Cover	900 5142	900 5144	900 5146	900 5148
*	Upper Back Cover	900 2717	900 2465	900 2511	900 2465

#	Description	Part No.
4	Door	806 6545
-	Hinge	900 07341
5	Handle	810 1397
-	Pin	806 4487
6	Basket Hanger	803 0028
7	Thumbscrew	809 0171
7	Nutsert	809 0079
8	Twin Size Basket	803 0022
8	Full Size Basket	803 0099
9	Hi-Limit (22KW. 17KW DV. 14KW DV)	806 8035 Coded Red
9	Hi-Limit (17KW FV. 14KW FV)	806 7543 Coded Black
9	Hi-Limit (All European Community (CE) Fryers)	806 8132 Coded Yellow
10	Element Spring	810 0297
11	Turnbuckle	809 0358
12	Support Rack FV	803 0132
13	Support Rack DV	803 0106
14	Caster 3" adj. w/o brake	810 0327
14	Caster 3" with brake	810 0944
14	Caster 8.5" rigid w/o brake	810 1242
14	Caster 8.5" rigid with brake	810 1239
15	Leg	810 1234
16	Fryer's Friend	803 0197
-	Frypot Brush	803 0209
-	Top Connecting Strip	900 7443
17	Leg/Caster Mounting Screws	809 0131
17	Leg/Caster Washer	809 0191
17	Leg Nut	809 0071
18	Frypot Cover FV	806 3068
19	Frypot Cover DV	806 3071



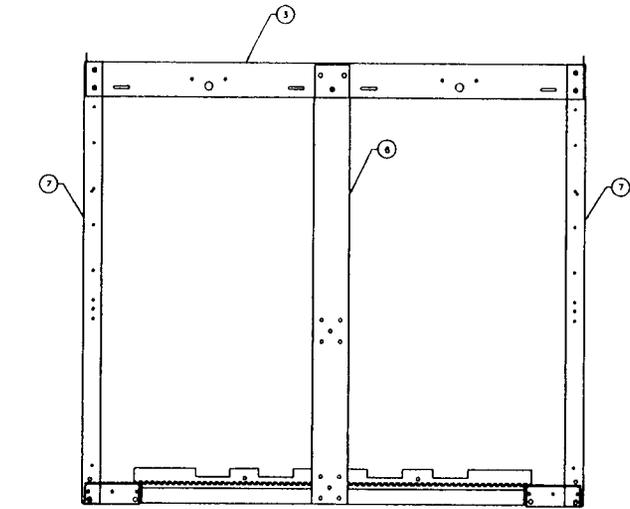
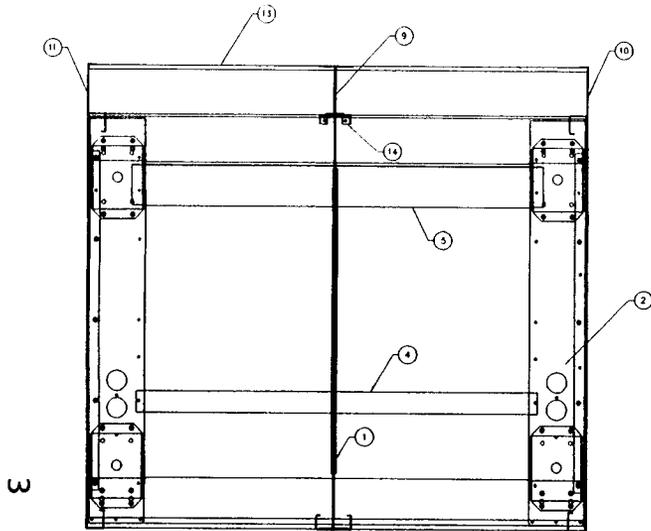
Common Electric Single Cabinet



2

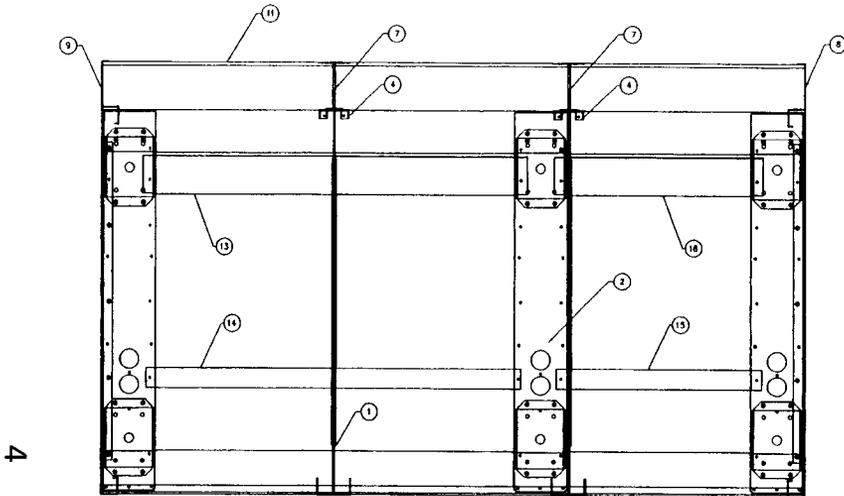
CRS		Stainless						
Ref. Part #		Ref. Part No.				Description		
10	SAME	10	8090413	PDS	1	SPACER, DOORPOST (NOT SHOWN)		
9	SAME	9	8261374	A		SCREW, 10-1/2 HEX HD (NOT SHOWN)		
8	SAME	8	9002733	B	1	BRACE, FRONT CONT. BOX		
7	SAME	7	9002734	B	1	BRACE, REAR CONT. BOX		
6	SAME	6	9002715	B	1	BRACE, REAR ENC HORIZ.		
5	SAME	5	9012459	B	1	REAR, ENC UPRIGHT COMMON ELEC.		
4	SAME	4	9022459	B	1	REAR, ENC UPRIGHT COMMON ELEC.		
3	SAME	3	9002716	B	1	BRACE, TOP		
2	9002456	2	9102456	B	2	CABINET, SIDE COMMON ELEC.		
1	SAME	1	8067003	B	1	BASE, SINGLE ASS.Y		

Common Electric Double Cabinet

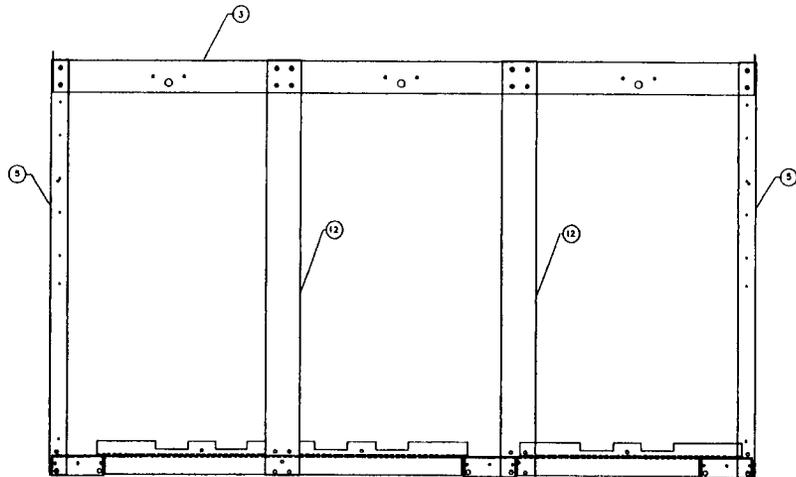


	CRS	Stainless				
Ref. Part No.	Ref. Part No.	Ref. Part No.			Description	
14	SAME	14	9002488	B	1	SUPPORT COMMON ELEC. REAR
13	SAME	13	9002460	B	1	REAR ENC HORIZ. BRACE COMMON
12	SAME	12	8090413	B	2	SPACERS, DOOR POST (NOT SHOWN)
11	SAME	11	9022459	B	1	REAR ENC UPRIGHT COMMON ELEC.
10	SAME	10	9012459	B	1	REAR ENC UPRIGHT COMMON ELEC.
9	SAME	9	9002486	B	1	SUPPORT COMMON ELEC REAR BRACE
8	SAME	8	8261374	A		SCREW, 10-1/2 HEX HD. (NOT SHOWN)
7	9002456	7	9102456	B	2	CABINET SIDE COMMON ELEC.
6	SAME	6	9002492	B	1	DOOR POST
5	SAME	5	9002627	B	1	BOX SUPPORT N/F REAR
4	SAME	4	9002626	B	1	BOX SUPPORT FRONT N/F
3	SAME	3	9002461	B	1	FRONT HORIZ. TOP BRACE
2	SAME	2	8066997	B	1	DBL BASE ASSY COMMON ELEC.
1	SAME	1	9002466	B	1	CABINET DIVIDER COMMON ELEC.

Common Electric Triple Cabinet

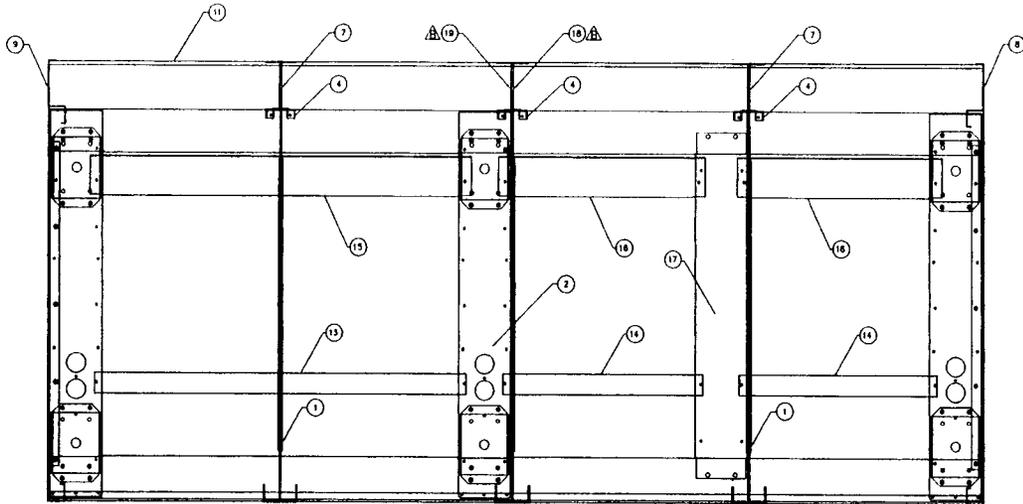


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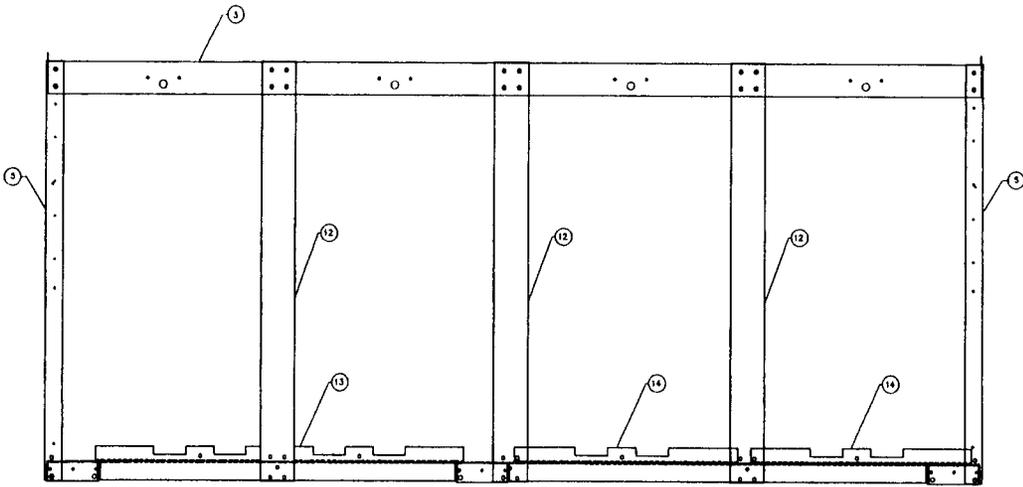


	CRS		Stainless			Description
	Ref. Part #	Ref. Part #				
16	SAME	16	9002720	B	1	BRACE, REAR CNTR BOX COMMON ELEC.
15	SAME	15	9002718	B	1	BRACE FRONT CNTR BOX COMMON ELEC.
14	SAME	14	9002627	B	1	SUPPORT, FRONT N/F COMMON ELEC.
13	SAME	13	9002626	B	1	SUPPORT, REAR N/F COMMON ELEC.
12	SAME	12	9002492	B	2	DOOR, POST COMMON ELEC.
11	SAME	11	9002495	B	1	REAR ENC HORIZ. BRACE COMMON
10	SAME	10	8090413	B	3	SPACERS, DOOR POST (NOT SHOWN)
9	SAME	9	9022459	B	1	REAR ENC UPRIGHT COMMON ELEC.
8	SAME	8	9012459	B	1	REAR ENC UPRIGHT COMMON ELEC.
7	SAME	7	9002486	B	2	SUPPORT COMMON ELEC REAR BRACE
6	SAME	6	8090412	A	70	SCREW, 10-1/2 HEX HD. (NOT SHOWN)
5	9002456	5	9102456	B	2	CABINET SIDE COMMON ELEC.
4	SAME	4	9002488	B	2	SUPPORT COMMON ELEC. REAR
3	SAME	3	9002493	B	1	FRONT HORIZ. TOP BRACE
2	SAME	2	8066999	B	1	TRPL. BASE ASSY COMMON ELEC.
1	SAME	1	9002466	B	2	CABINET DIVDER COMMON ELEC.

Common Electric Quad Cabinet



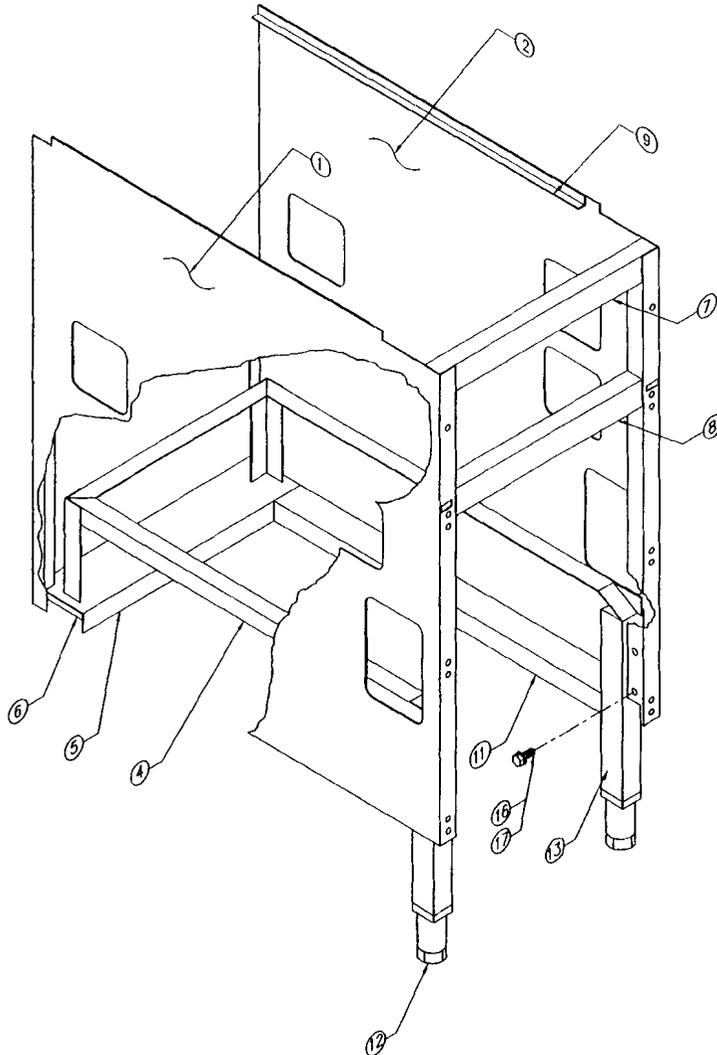
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Ref. Part #	CRS	Ref. Part #	Stainless	Description		
19	SAME	19	9022943	B	1	REAR, ENCLOSURE UPRIGHT W/HOLE
18	SAME	18	9012943	B	1	REAR, ENCLOSURE UPRIGHT W/HOLE
17	SAME	17	9002710	B	1	BRACE, CROSS COMMON ELEC.
16	SAME	16	9002720	B	2	BRACE, REAR CNTR BOX COMMON ELEC.
15	SAME	15	9002626	B	1	SUPPORT, REAR N/F COMMON ELEC.
14	SAME	14	9002718	B	2	BRACE, FRONT CNTR BOX COMMON
13	SAME	13	9002627	B	1	SUPPORT FRONT N/F COMMON ELEC.
12	SAME	12	9002492	B	3	DOOR, POST COMMON ELEC.
11	SAME	11	9002460	B	2	REAR ENC HORIZ. BRACE COMMON
10	SAME	10	8090413	B	4	SPACERS, DOOR POST (NOT SHOWN)
9	SAME	9	9022459	B	1	REAR ENC UPRIGHT COMMON ELEC.
8	SAME	8	9012459	B	1	REAR ENC UPRIGHT COMMON ELEC.
7	SAME	7	9002486	B	3	SUPPORT COMMON ELEC REAR BRACE
6	SAME	6	8090412	A	75	SCREW, 10-1/2 HEX HD. (NOT SHOWN)
5	9002456	5	9102456	B	2	CABINET SIDE COMMON ELEC.
4	SAME	4	9002488	B	3	SUPPORT COMMON ELEC. REAR
3	SAME	3	9002723	B	1	FRONT HORIZ. TOP BRACE
2	SAME	2	8067001	B	1	QUAD. BASE ASSY COMMON ELEC.
1	SAME	1	9002466	B	3	CABINET DIVIDER COMMON ELEC.

Filter Magic Cabinet Assembly

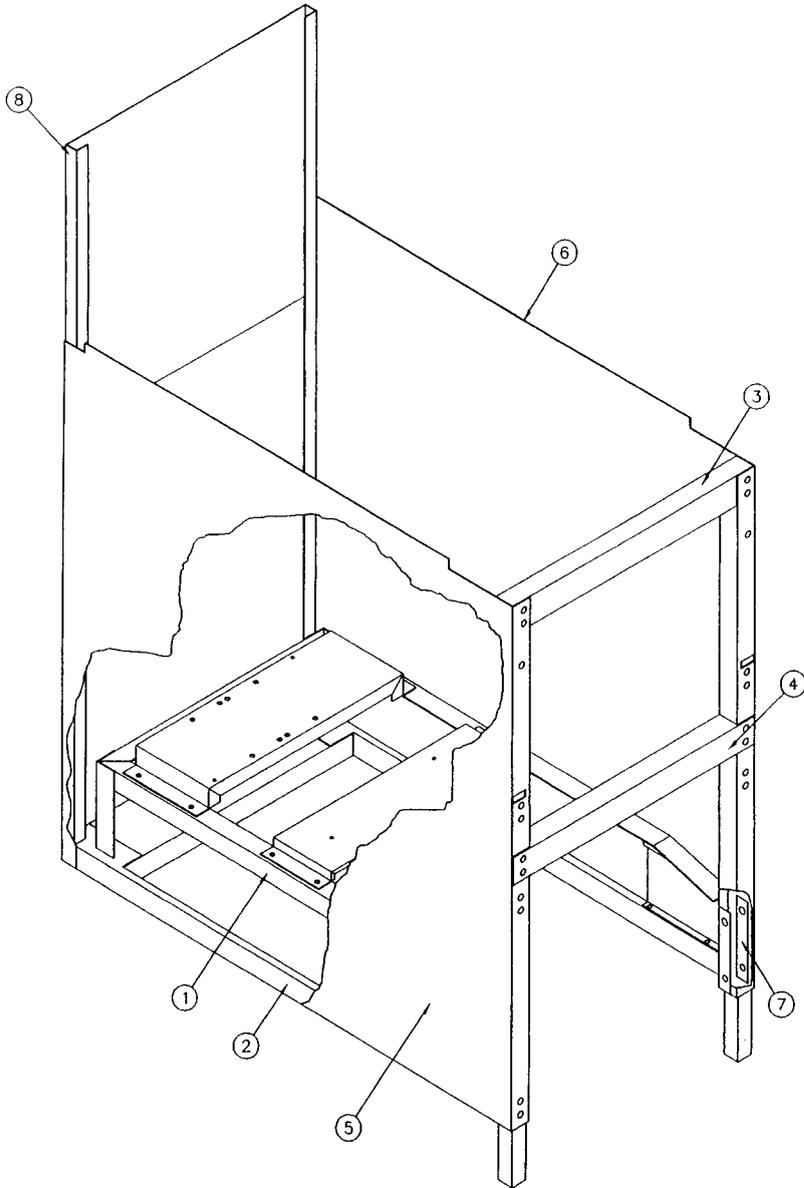
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Filter Right SS		Filter CRS		Description		
Ref. Part #	Ref. Part #					
17	SAME	17	8090412	A	60	SCREW, #10-1/2" HEX HEAD
16	SAME	16	8090449	A	4	SCREW, TRUSS HEAD #10
15	SAME	15	9001621	B	2	PLATE, RAIL MOUNT (NOT SHOWN)
14		14		-	-	RETAINER, LEG INSERT (9101832) (NOT SHOWN)
13		13		-	-	LEG, FILTER (9102829)
12		12		-	-	LEG, ADJUSTABLE (8100007)
11	SAME	11	9024390	B	1	CHANNEL, RIGHT SIDE
10	SAME	10	9014390	B	1	CHANNEL, LEFT SIDE (NOT SHOWN)
9	SAME	9	9007277	B	2	STIFFENER, CABINET
8	SAME	8	9002838	B	1	BRACE, FILTER FRONT
7	SAME	7	9004813	B	1	BRACE, CABINET TOP SINGLE
6	SAME	6	8065209	B	2	PAD, LEG
5	SAME	5	9004389	B	1	CHANNEL, REAR SINGLE FP
4	SAME	4	8067392	B	1	ASSY, FILTER PAN RAIL
3		3				
2	9122834	2	9022834	B	1	SIDE, CABINET COMMON
1	9012834	1	9012834	B	1	SIDE, CABINET COMMON

Filter Left SS		Filter Standard SS		Description		
Ref. Part #	Ref. Part #					
17	SAME	17	8090412	A	60	SCREW, #10-1/2" HEX HEAD
16	SAME	16	8090449	A	4	SCREW, TRUSS HEAD #10
15	SAME	15	9001621	B	2	PLATE, RAIL MOUNT (NOT SHOWN)
14		14		-	-	RETAINER, LEG INSERT (9101832) (NOT SHOWN)
13		13		-	-	LEG, FILTER (9102829)
12		12		-	-	LEG, ADJUSTABLE (8100007)
11	SAME	11	9024390	B	1	CHANNEL, RIGHT SIDE
10	SAME	10	9014390	B	1	CHANNEL, LEFT SIDE (NOT SHOWN)
9	SAME	9	9007277	B	2	STIFFENER, CABINET
8	SAME	8	9102838	B	1	BRACE, FILTER FRONT
7	SAME	7	9004813	B	1	BRACE, CABINET TOP SINGLE
6	SAME	6	8065209	B	2	PAD, LEG
5	SAME	5	9004389	B	1	CHANNEL, REAR SINGLE FP
4	SAME	4	8067392	B	1	ASSY, FILTER PAN RAIL
3		3				
2	9022834	2	9122834	B	1	SIDE, CABINET COMMON
1	9112834	1	9112834	B	1	SIDE, CABINET COMMON

Common Electric Single FootPrint Cabinet



Cabinet Assembly Stainless Steel

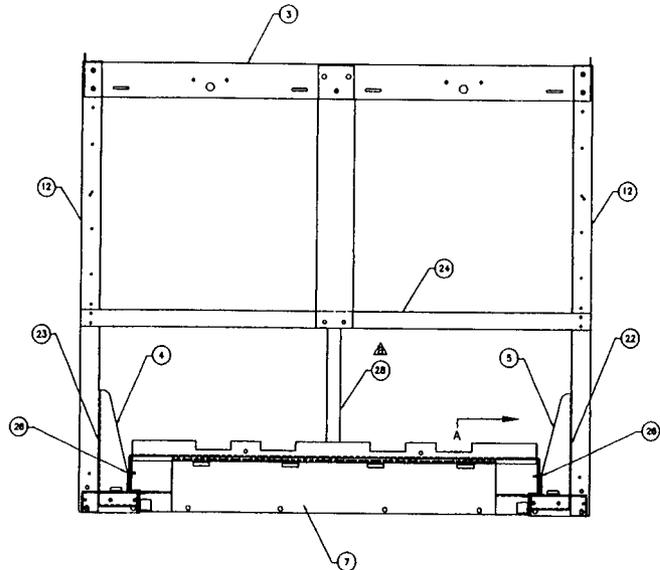
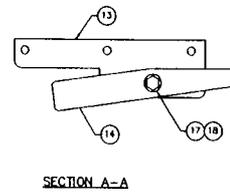
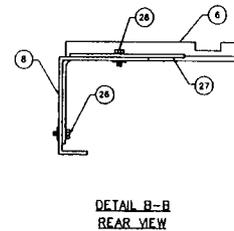
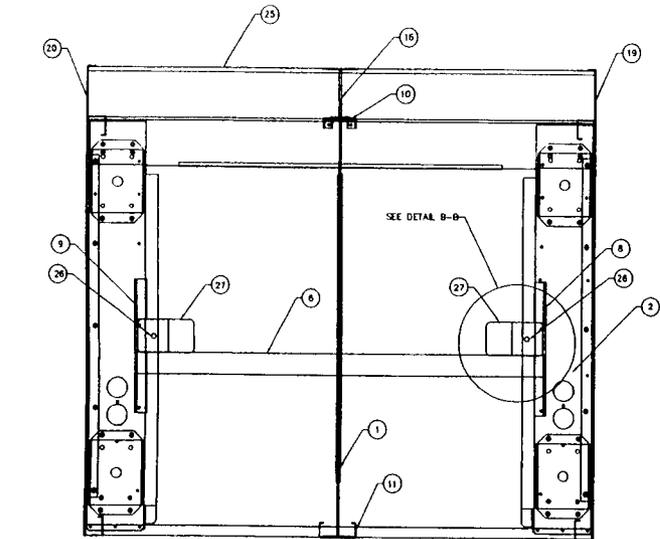
*	9101601		2	LEG, CABINET FRONT FILTER
*	8090191		8	WASHER, LK 1/4 SPRING ZP
*	8090070		8	NUT HEX 1/4 X 20 SS
*	8261389			SCREW, 1/4-20 X 3/4 HX HD ZP
*	8261374			SCREW #10-16 x 1/2 HX WSHR HD NP
9				
8	9102912	B	1	BACK, UPPER CABINET SINGLE ELECT FP
7	9001621	C	2	PLATE, RAIL MOUNT SINGLE FP
6	9129314	D	1	SIDE, CABINET CRS RIGHT
5	9119314	D	1	SIDE, CABINET CRS LEFT
4	9004391	C	1	BRACE, CABINET FRONT
3	9004393	C	1	BRACE, TOP SINGLE FP
2	8064897	D	1	BASE, SINGLE FP
1	8064910	D	1	RAIL ASSEMBLY, SINGLE FP

Cabinet Assembly Cold-Rolled Steel

*	9101601		2	LEG, CABINET FRONT FILTER
*	8090191		8	WASHER, LK 1/4 SPRING ZP
*	8090070		8	NUT HEX 1/4 X 20 SS
*	8261389			SCREW, 1/4-20 X 3/4 HX HD ZP
*	8261374			SCREW #10-16 x 1/2 HX WSHR HD NP
9				
8	9002912	B	1	BACK, UPPER CABINET SINGLE ELECT FP
7	9001621	B	2	PLATE, RAIL MOUNT SINGLE FP
6	9029314	B	1	SIDE, CABINET CRS RIGHT
5	9019314	B	1	SIDE, CABINET CRS LEFT
4	9004391	B	1	BRACE, CABINET FRONT
3	9004393	B	1	BRACE, TOP SINGLE FP
2	8064897	D	1	BASE, SINGLE FP
1	8064910	D	1	RAIL ASSEMBLY, SINGLE FP
ITEM	PART NO	SIZE	QTY	DESCRIPTION

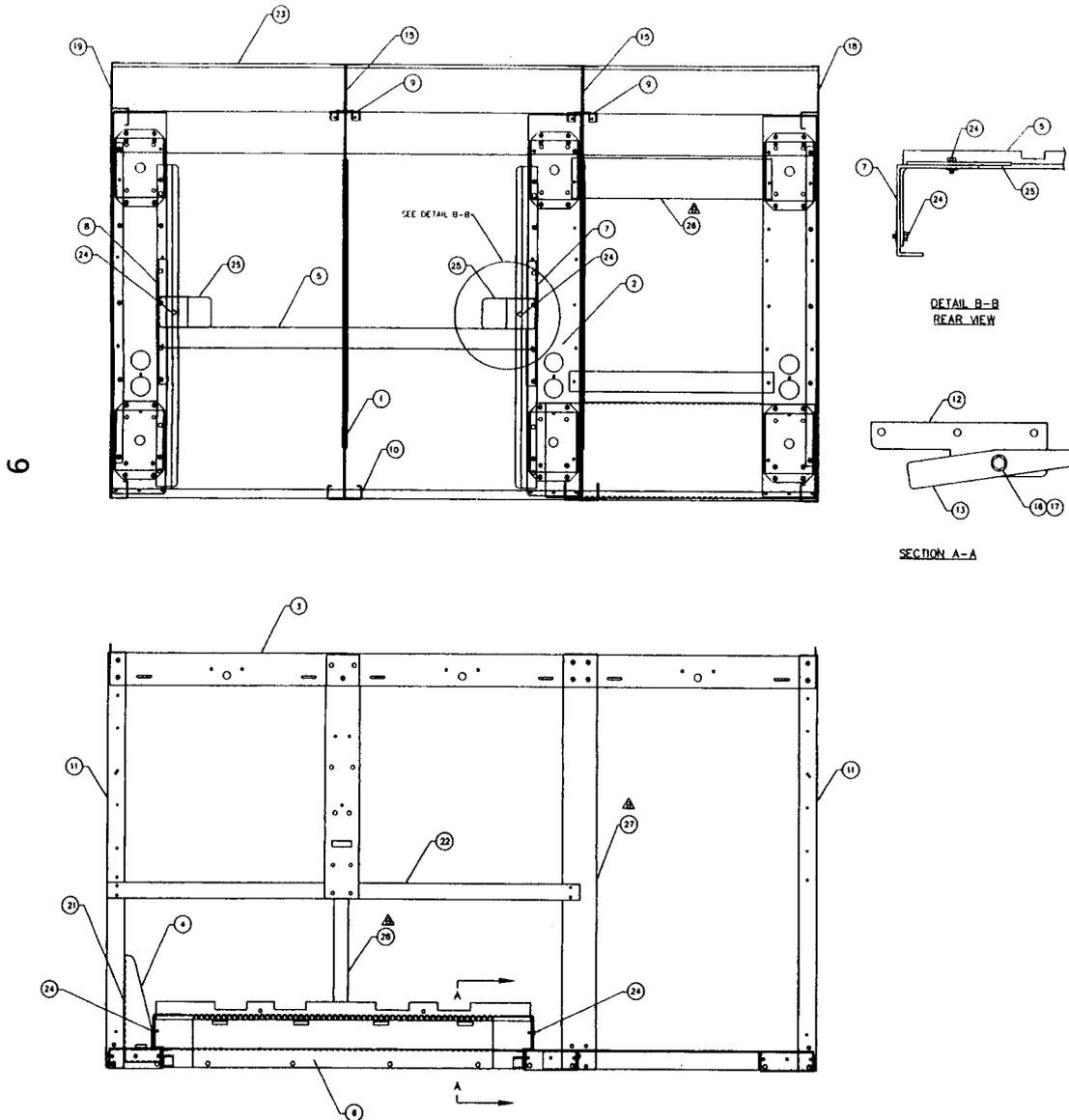
Common Electric Double FootPrint Cabinet

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Cold-Rolled Steel		Stainless Steel				Description
Ref	Part #	Ref	Part #			
28	SAME	28	9002861	B	1	SUPPORT, BOTTOM COMMON ELECTRIC
27	SAME	27	9002653	B	2	SWIVEL PLATE
26	SAME	26	8090538	B	4	SHOULDER BOLT 5/16" 1/4-20
25	SAME	25	9002460	B	1	REAR ENC HORIZ. BRACE COMMON
24	SAME	24	9002464	B	1	LOW FRONT HORIZ. BRACE
23	SAME	23	9011948	B	1	CHANNEL SIDE SUPPORT
22	SAME	22	9021948	B	1	CHANNEL SIDE SUPPORT
21	SAME	21	8090413	B	2	SPACERS, DOOR POST (NOT SHOWN)
20	SAME	20	9022459	B	1	REAR ENC UPRIGHT COMMON ELEC.
19	SAME	19	9012459	B	1	REAR ENC UPRIGHT COMMON ELEC.
18	SAME	18	8261376	PDS		NUT KEPS 10-32 HEX ZINC PLT (NOT SHOWN)
17	SAME	17	8090422	A	2	SCREW, F.P. COVER (NOT SHOWN)
16	SAME	16	9002486	B	1	SUPPORT COMMON ELEC REAR BRACE
15	SAME	15	8261374	A		SCREW, 10-1/2 HEX HD. (NOT SHOWN)
14	SAME	14	9001957	B	2	LOCK, BIM53 CRS FILTER
13	SAME	13	9001959	B	2	BRKT. BIM53 FLTR MOUNTING LOCK
12	9002456	12	9102456	B	2	CABINET SIDE COMMON ELEC.
11	SAME	11	9002463	B	1	CENTER DOORPOST COMMON ELEC
10	SAME	10	9002488	B	1	SUPPORT COMMON ELEC. REAR
9	SAME	9	8232290	B	1	SUPPORT COMMON ELEC FRT BRIDGE
8	SAME	8	8232291	B	1	SUPPORT COMMON ELEC. FRT BRIDGE
7	SAME	7	9002516	B	1	SUPPORT COMMON ELEC. RR BRIDGE
6	SAME	6	9002514	B	1	BRIDGE, COMMON ELEC.
5	SAME	5	9021810	B	1	GUSSET, BIM53 CAB RT.
4	SAME	4	9011810	B	1	GUSSET, BIM53 CAB. LT.
3	SAME	3	9002461	B	1	FRONT HORIZ. TOP BRACE
2	SAME	2	8066511	B	1	DBL BASE ASSY COMMON ELEC.
1	SAME	1	9002466	B	1	CABINET DIVIDER COMMON ELEC.

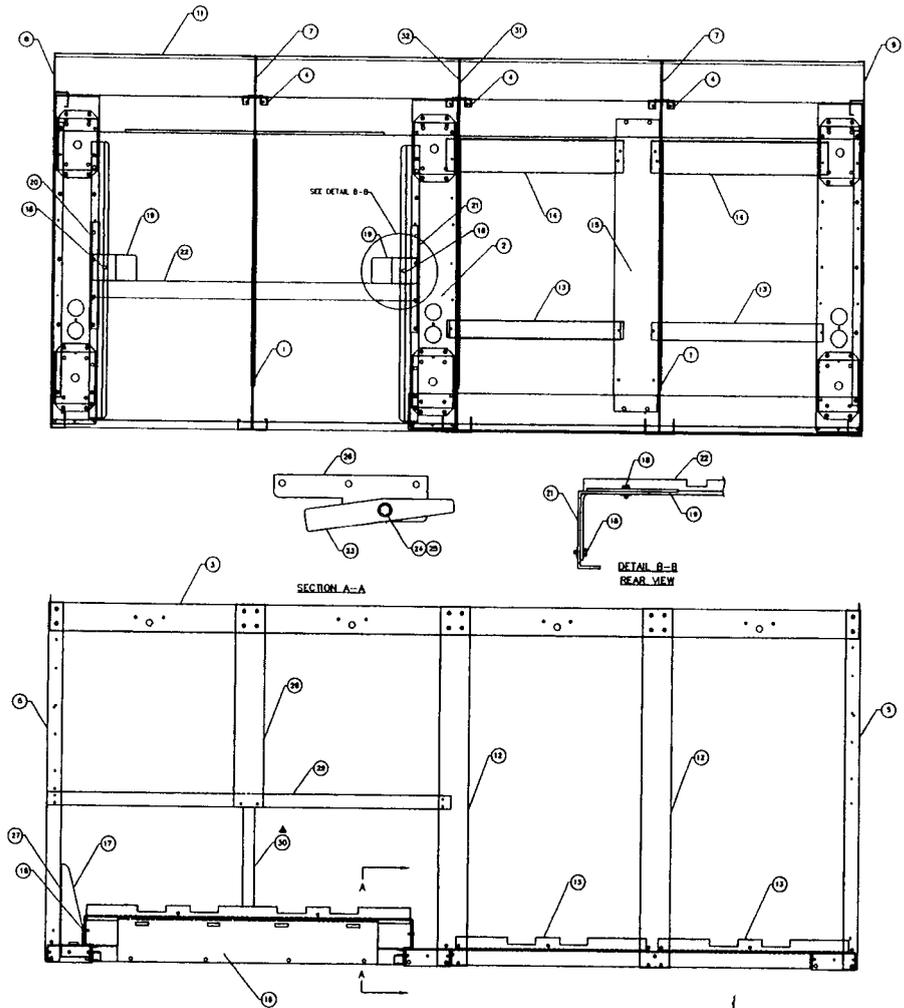
Common Electric Triple FootPrint Cabinet



CRS Ref. Part #	Stainless Ref. Part #	Description
28	SAME	28 9002861 B 2 SUPPORT, BOTTOM COMMON ELECTRIC
27	SAME	27 9002492 B 1 DOOR, POST COMMON ELEC.
26	SAME	26 9002720 B 1 BRACE, REAR CNTR BOX COMMON ELEC.
25	SAME	25 9002653 B 2 SWIVEL PLATE
24	SAME	24 8090538 B 4 SHOULDER BOLT 5/16" 1/4-20
23	SAME	23 9002495 B 1 REAR ENC HORIZ. BRACE COMMON
22	SAME	22 9002464 B 1 LOW FRONT HORIZ. BRACE
21	SAME	21 9011948 B 1 CHANNEL SIDE SUPPORT
20	SAME	20 8090413 B 2 SPACERS, DOOR POST (NOT SHOWN)
19	SAME	19 9022459 B 1 REAR ENC UPRIGHT COMMON ELEC.
18	SAME	18 9012459 B 1 REAR ENC UPRIGHT COMMON ELEC.
17	SAME	17 8261376 NUT KEPS 10-32 HEX ZINC PLT (NOT SHOWN)
16	SAME	16 8090422 A 2 SCREW, F.P. COVER (NOT SHOWN)
15	SAME	15 9002486 B 1 SUPPORT COMMON ELEC REAR BRACE
14	SAME	14 8261374 A SCREW, 10-1/2 HEX HD. (NOT SHOWN)
13	SAME	13 9001957 B 2 LOCK, BIM53 CRS FILTER
12	SAME	12 9001959 B 2 BRKT. BIM53 FLTR MOUNTING LOCK
11	9002456	11 9102456 B 2 CABINET SIDE COMMON ELEC.
10	SAME	10 9002463 B 1 CENTER DOORPOST COMMON ELEC
9	SAME	9 9002488 B 1 SUPPORT COMMON ELEC. REAR
8	SAME	8 8232290 B 1 SUPPORT COMMON ELEC FRT BRIDGE
7	SAME	7 8232291 B 1 SUPPORT COMMON ELEC. FRT BRIDGE
6	SAME	6 9002516 B 1 SUPPORT COMMON ELEC. RR BRIDGE
5	SAME	5 9002514 B 1 BRIDGE, COMMON ELEC.
4	SAME	4 9011810 B 1 GUSSET, BIM53 CAB. LT.
3	SAME	3 9002493 B 1 FRONT HORIZ. TOP BRACE
2	SAME	2 8066513 B 1 TRPL BASE ASSY COMMON ELEC.
1	SAME	1 9002466 B 1 CABINET DIVIDER COMMON ELEC.

Common Electric Quad FootPrint Cabinet

10

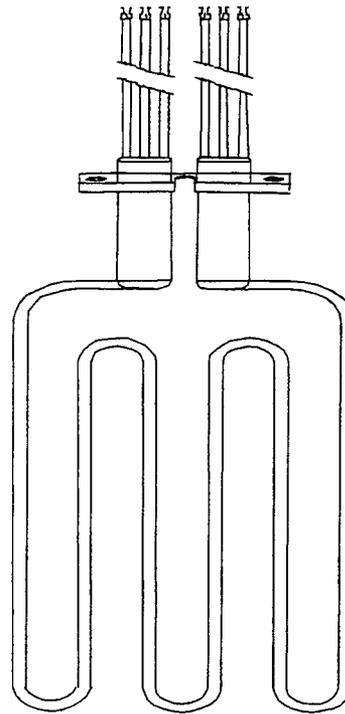


CRS		Stainless				Description	
Ref.	Part #	Ref.	Part #				
32	SAME	32	9022943	B	1	REAR, ENCLOSURE UPRIGHT W/HOLE	
31	SAME	31	9012943	B	1	REAR, ENCLOSURE UPRIGHT W/HOLE	
30	SAME	30	9002861	B	3	SUPPORT, BOTTOM COMMON ELECTRIC	
29	SAME	29	9002464	B	1	LOW, FRONT HORIZ. BRACE	
28	SAME	28	9002463	B	1	CENTER, DOORPOST COMMON ELEC.	
27	SAME	27	9011948	B	1	CHANNEL SIDE SUPPORT	
26	SAME	26	9001959	B	2	BRKT. BIM53 FLTR MOUNTING LOCK	
25	SAME	25	8261376			NUT KEPS 10-32 HEX ZINC PLT (NOT SHOWN)	
24	SAME	24	8090422	A	2	SCREW, F.P. COVER (NOT SHOWN)	
23	SAME	23	9001957	B	2	LOCK, BIM53 CRS FILTER	
22	SAME	22	9002514	N	1	BRIDGE, COMMON ELEC.	
21	SAME	21	8232291	B	1	SUPPORT COMMON ELEC FRT BRIDGE	
20	SAME	20	8232290	B	1	SUPPORT COMMON ELEC FRT BRIDGE	
19	SAME	19	9002653	B	2	SWIVEL, PLATE	
18	SAME	18	8090538	B	4	SHOULDER BOLT 5/16" 1/4-20	
17	SAME	17	9011810	B	1	GUSSET, BIM53 CAB. LT	
16	SAME	16	9002516	B	1	SUPPORT COMMON ELEC. RR BRIDGE	
15	SAME	15	9002710	B	1	BRACE, CROSS COMMON ELEC.	
14	SAME	14	9002720	B	2	BRACE, REAR CNTR BOX COMMON ELEC.	
13	SAME	13	9002718	B	2	BRACE, FRONT CNTR BOX COMMON	
12	SAME	12	9002492	B	2	DOOR, POST COMMON ELEC.	
11	SAME	11	9002460	B	2	REAR ENC HORIZ. BRACE COMMON	
10	SAME	10	8090413	B	4	SPACERS, DOOR POST (NOT SHOWN)	
9	SAME	9	9022459	B	1	REAR ENC UPRIGHT COMMON ELEC.	
8	SAME	8	9012459	B	1	REAR ENC UPRIGHT COMMON ELEC.	
7	SAME	7	9002486	B	3	SUPPORT COMMON ELEC REAR BRACE	
6	SAME	6	8261374	A		SCREW, 10-1/2 HEX HD. (NOT SHOWN)	
5	9002456	5	9102456	B	2	CABINET SIDE COMMON ELEC.	
4	SAME	4	9002488	B	3	SUPPORT COMMON ELEC. REAR	
3	SAME	3	9002723	B	1	FRONT HORIZ. TOP BRACE	
2	SAME	2	8067005	B	1	QUAD. BASE ASSY COMMON ELEC.	
1	SAME	1	9002466	B	3	CABINET DIVIDER COMMON ELEC.	

Heating Source and Components

HEATING ELEMENTS - SEE FIGURE 1-1

Kit Part #	Volts	Watts	Phase
826 1292	208V	7KW	3
826 1293	208V	8.5KW	3
826 1294	208V	11KW	3
USE 826 1301	220V	7KW	3
826 1295	220V	8.5KW	3
826 1296	220V	11KW	3
*826 1297	230V	7KW	3
826 1298	230V	8.5KW	3
826 1299	230V	11KW	3
826 1300	240V	7KW	3
**826 1301	240V	8.5KW	3
826 1302	240V	11KW	3
USE 826 1298	200V	7KW	3
826 1303	200V	8.5KW	3
826 1304	200V	11KW	3
826 1305	380V	7KW	3
826 1306	380V	8.5KW	3
826 1307	380V	11KW	3
826 1308	440V	7KW	3
826 1309	440V	8.5KW	3
826 1310	440V	11KW	3
826 1311	480V	7KW	3
826 1312	480V	8.5KW	3
826 1313	480V	11KW	3
826 1309	400V	7KW	3
826 1314	400V	8.5KW	3
826 1315	400V	11KW	3



* Use this element for McDonald's H14 series fryers in U.K.
 ** All European Community McD's 14 series fryers except U.K.

FIGURE 1-1

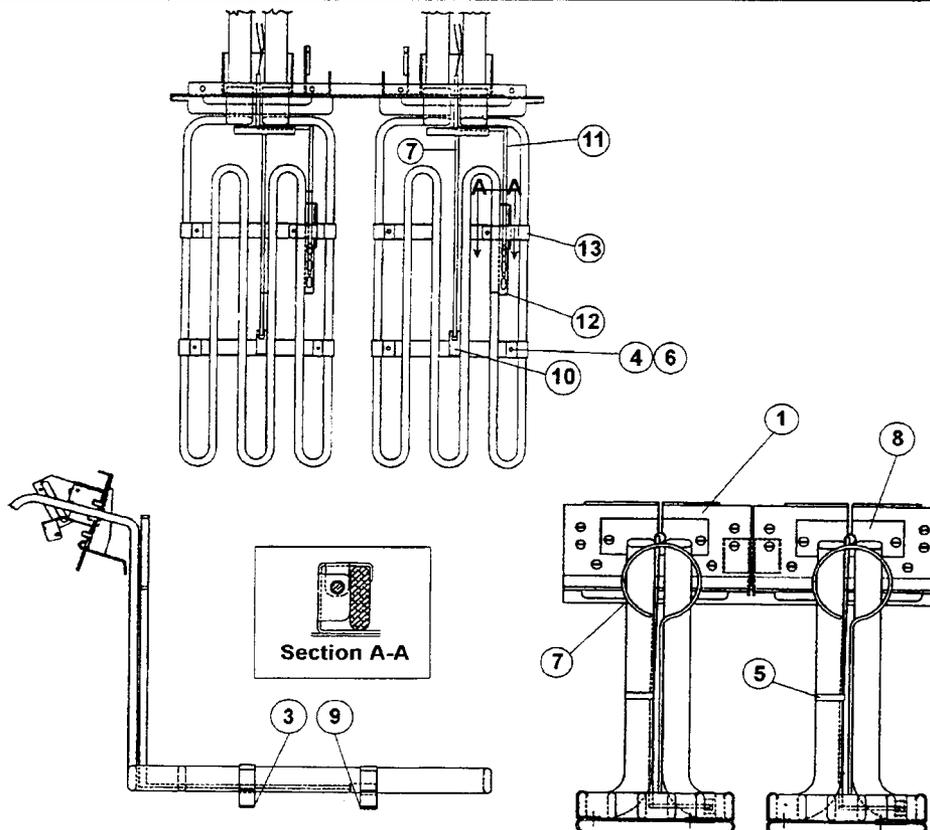
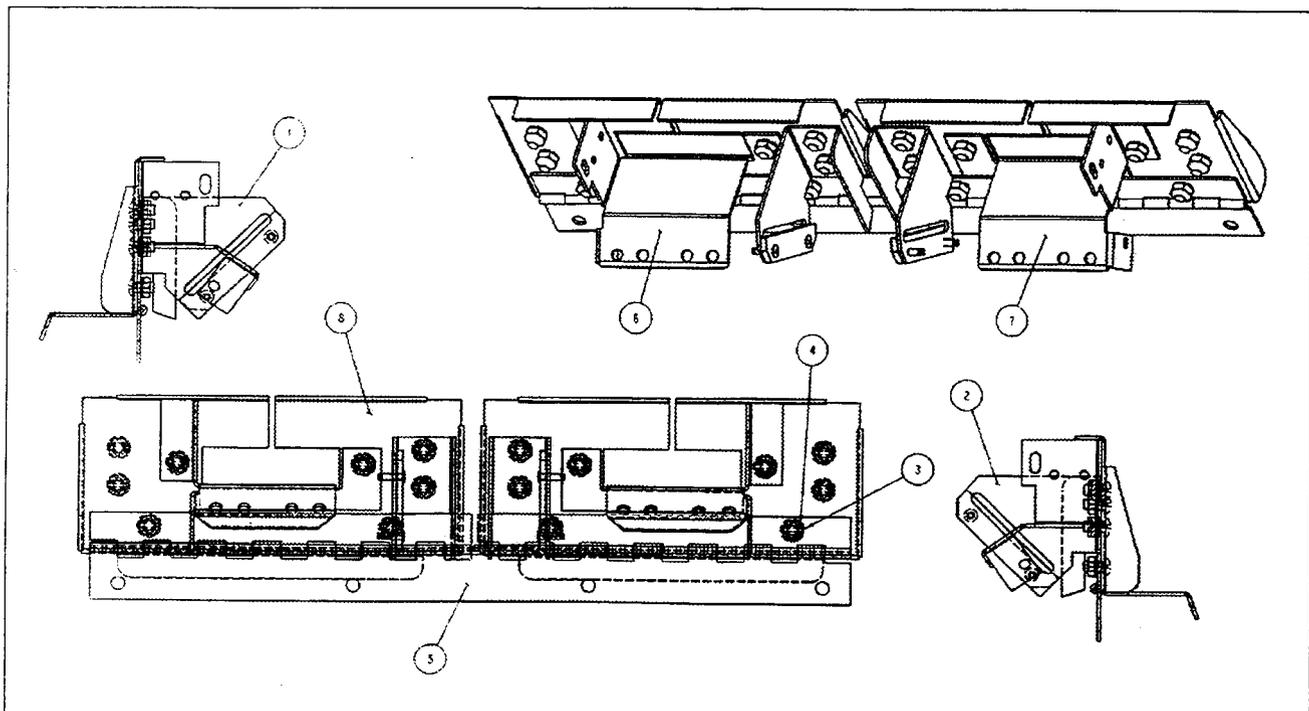


Figure 1-2

Heating Element Assembly - See Figure 1-2				
Item	Part Number	Description	FV	DV
1	806 7177	Tilt Plate Assembly	✓	✓
2	See Prev. Page	Heating Element	✓	✓
3	910 3681	Element Support	✓	
3	910 5214	Element Support		✓
4	910 2042	Element Clamp	✓	✓
5	809 0567	Metal Tie Wrap	✓	✓
6	809 0518	Screw #8 32 x 3/8	✓	✓
7	810 1233	Lift Handle	✓	✓
8	826 1339	Bushing .375 x .188 ID (Qty. of 10)	✓	✓
9	823 2377	Element Support	✓	
9	823 2378	Element Support		✓
10	826 1364	1/8 x 1/2 Spring Pin (Qty. of 25)	✓	✓
11	807 2478	Temperature Probe	✓	✓
12	910 5022	Temperature Probe Bracket		
13	910 5213	Electric Element Clamp	✓	✓
	826 1060	Tilt Switch Assembly Kit		✓
	826 1061	Tilt Switch Assembly Kit	✓	

Tilt Plate Assembly (806-7177) - See Figure 1-3		
Item	Part Number	Description
1	806 8285	Slot Bracket Spring, Right
2	806 8286	Slot Bracket Spring, Left
3	826 1330	Screw, 10-32 x 3/8 (Qty. of 25)
4	826 1376	Nut, 10-32 (Qty. of 10)
5	810 0035	Hinge, SS
6	901 2737	Bracket, Element Support Left
7	902 2737	Bracket, Element Support Right
8	910 0873	Tilt Plate



Contactor Box Assembly

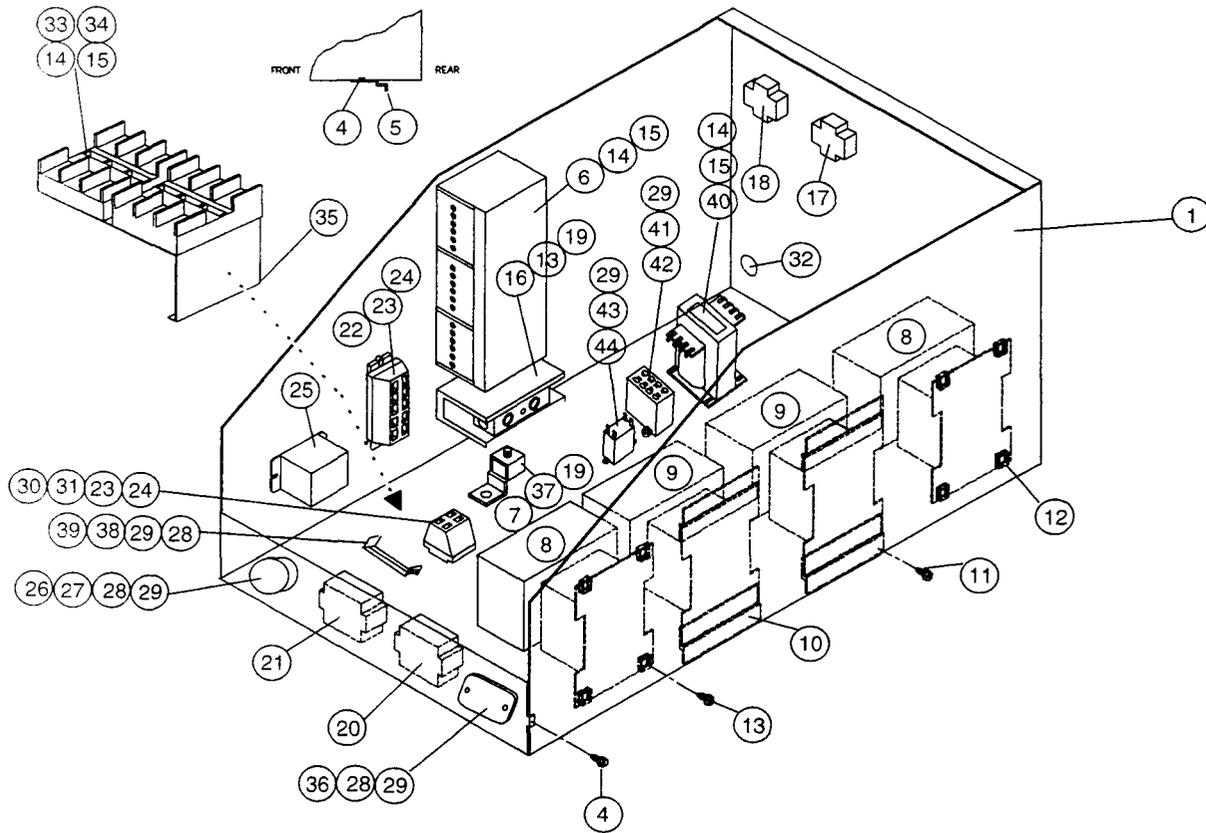


Figure 2-1

Item	Part Number	Description	FV	DV
Contactor Box Assembly - See Figure 2-1				
1	900 2468	Contactor Box	✓	✓
2	900 2469	Contactor Box Back	✓	✓
3	900 5131	Lower Contactor Box Cover	✓	✓
3	900 5132	Upper Contactor Box Cover	✓	✓
4	809 0359	Screw #8 x 1/4	✓	✓
5	900 2519	Control Box Hinge	✓	✓
6	807 2464	Delta Terminal Block	✓	✓
6	807 2465	WYE Terminal Block	✓	✓
7	807 0070	Brundy Terminal Lug	✓	✓
8	810 1202	40 AMP 3 Pole Contactor	✓	✓
9	807 1071	Mercury Contactor 24VAC	✓	✓
10	900 2738	Contactor Bracket	✓	✓
11	809 0372	Screw 8-32 x 3/8	✓	✓
12	809 0448	Tinnerman Clip	✓	✓
13	826 1374	Screw #10-1/2 (Qty. of 25)	✓	✓
14	809 0123	Screw 10-32 x 3/4	✓	✓
15	826 1376	Nut 10-32 (Qty. of 10)	✓	✓

Item	Part Number	Description	FV	DV
16	807 1268	Terminal Block Splicer (WYE Connection)	✓	✓
17	806 7185	Right Wire Assembly w/Contactors	✓	✓
18	806 7183	Left Wire Assembly w/Contactors		✓
18	806 7186	Left Wire Assembly w/Contactors	✓	
19	809 0247	Nut 8-32	✓	✓
20	806 7191	C2 Wiring Assembly	✓	✓
20	806 8269	C2 Wiring Assembly (McDonald's)	✓	✓
20	806 7666	C2 Wiring Assembly (McDonald's Export)	✓	✓
20	806 8094	C2 Wiring Assembly CSA (McDonald's)	✓	✓
21	806 7664	C1 Wiring Assembly (McDonald's)	✓	
21	806 7669	C1 Wiring Assembly (McDonald's)		✓
21	806 8096	C1 Wiring Assembly CSA (McDonald's)		✓
21	806 8095	C1 Wiring Assembly CSA (McDonald's)	✓	
21	806 7197	C1 Wiring Assembly (McDonald's Export)	✓	
21	806 8017	C1 Wiring Assembly (McDonald's Export)		✓
21	806 7199	C1 Wiring Assembly	✓	
21	806 7198	C1 Wiring Assembly		✓
21	806 7208	C1 Wiring Assembly ShipBoard 440/480	✓	
22	810 1163	Terminal Block 3 PLC (McDonald's)	✓	✓
23	809 0354	Screw 4-40 x 3/4	✓	✓
24	809 0238	Nut 4-40	✓	✓
25	807 1683	Hood Relay (McDonald's)	✓	✓
26	807 0922	Fuse Holder	✓	✓
27	807 2278	Fuse 20 Amp	✓	✓
27	807 2279	Fuse 15 Amp	✓	✓
28	809 0095	Screw 6-32 x 3/8	✓	✓
29	809 0250	Nut 6-32	✓	✓
30	810 1164	Terminal Block 1 PLC	✓	✓
31	816 0217	Insulating Paper	✓	✓
32	810 0743	Plug Button	✓	✓
33	807 0501	Fuse Block 3-Pole Buss (22KW)	✓	✓
34	807 2240	Fuse 60 Amp (22KW)	✓	✓
35	900 2865	Block Support (22KW)Fuse	✓	✓
36	900 5157	Fuse Cover Plate	✓	✓
37	809 0104	Screw 8-32 x 1/2	✓	✓
38	807 2201	Fuse Holder	✓	✓
39	807 0921	Fuse 3 AMP	✓	✓
40	807 0064	Transformer (150VA)	✓	✓
40	807 0331	Transformer (250VA) w/basket lift	✓	✓
41	809 0098	Screw 6-32 x 1 1/4	✓	✓
42	807 0067	8-pin Terminal Block	✓	✓
43	809 0290	Plastic Wire Clamp	✓	✓
44	807 0012	Relay 15 AMP	✓	✓

EPRI Module - See Figure 2-2				
Ref.	Part No.	Description	FV	DV
1	806 5072	PC Board Module (includes ref. 2 and Heatsink Compound)	✓	✓
2	807 1276	Triac	✓	✓
3	812 1283	Heatsink	✓	✓
4	807 1337	Standoff	✓	✓
5	809 0096	Screw, 6-32 x .625	✓	✓
6	809 0406	Screw, 6-32 x .25	✓	✓
*	815 0554	Heatsink Compound	✓	✓

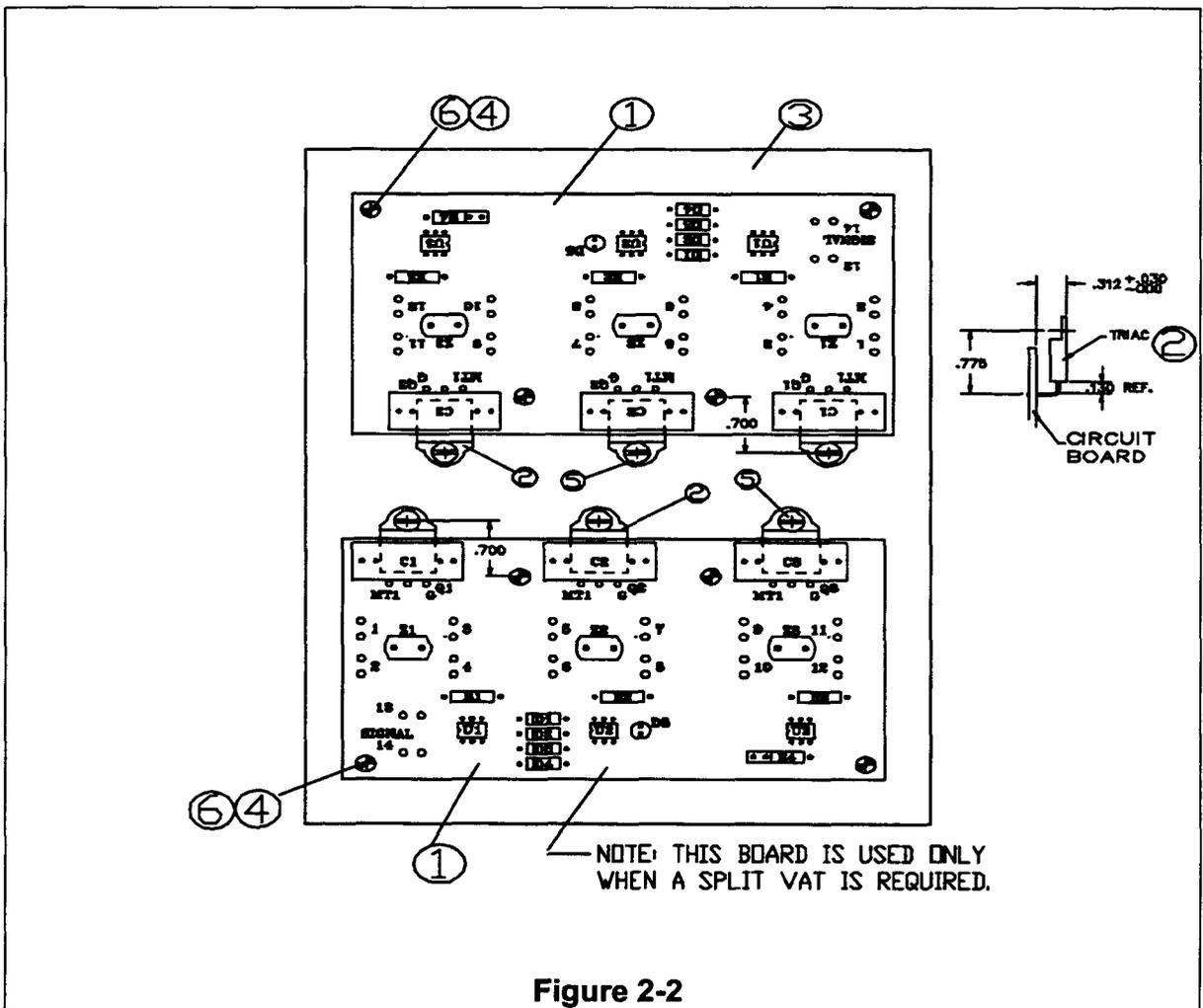


Figure 2-2

Computer/Controller and Component Box

Component Box Assembly - See Figure 3-1

Item	Part Number	Description	FV	DV
1	806 6875	Left Linkage Assembly (Filter Units)	✓	✓
1	806 6874	Right Linkage Assembly (Filter Units)	✓	✓
2	807 1683	Burnoff Relay (McDonald's CE Models)	✓	✓
3	810 1164	Terminal Block 1PLC	✓	✓
4	900 2462	Component Box	✓	✓
5	807 0680	Transformer 208/240 - 24 - 20VA	✓	✓
5	807 2180	Transformer 208/220/230/240 - 24 - 50VA	✓	✓
5	807 2181	Transformer 100/120 - 24 - 62VA	✓	✓
6	807 2191	Transformer 208/230/240 - 12 - 30VA	✓	✓
6	807 2192	Transformer 100/120 - 12 - 30VA	✓	✓
6	807 0855	Transformer 120 - 12 - 20VA	✓	✓
6	807 1999	208/220/230/240 - 12/24 - 20/50VA for single FP	✓	✓
7	806 6336	Interface Board	✓	✓
7	806 6347	Interface Board EPRI	✓	✓
7	806 7935	Interface Board (Navy Shipboard)	✓	✓
8	806 6854	Bushing	✓	✓
9	807 1084	Transformer Wiring Assembly	✓	✓
10	806 6863	Burnoff Wiring Assembly (McDonald's CE Models)	✓	✓
10	806 6864	Burnoff Wiring Assembly (McDonald's CE Models)	✓	✓
11	809 0349	Spacer, 4mm x 6mm	✓	✓
12	809 0250	Nut, 6-32	✓	✓
13	809 0359	Screw #8 x 1/4	✓	✓
14	809 0105	Screw #8 x 3/8	✓	✓
15	809 0354	Screw 4-40 x 3/4	✓	✓
16	809 0237	Nut 4-40	✓	✓
17	806 7179	Sound Device	✓	✓
18	816 0217	Insulating Paper	✓	✓
19	806 2071	Computer/Interface Board Cable Assembly	✓	✓
20	807 0037	Terminal Tab	✓	✓
21	806 1321	Panel Fuse Holder	✓	✓
21	806 1597	Panel Fuse 3A	✓	✓

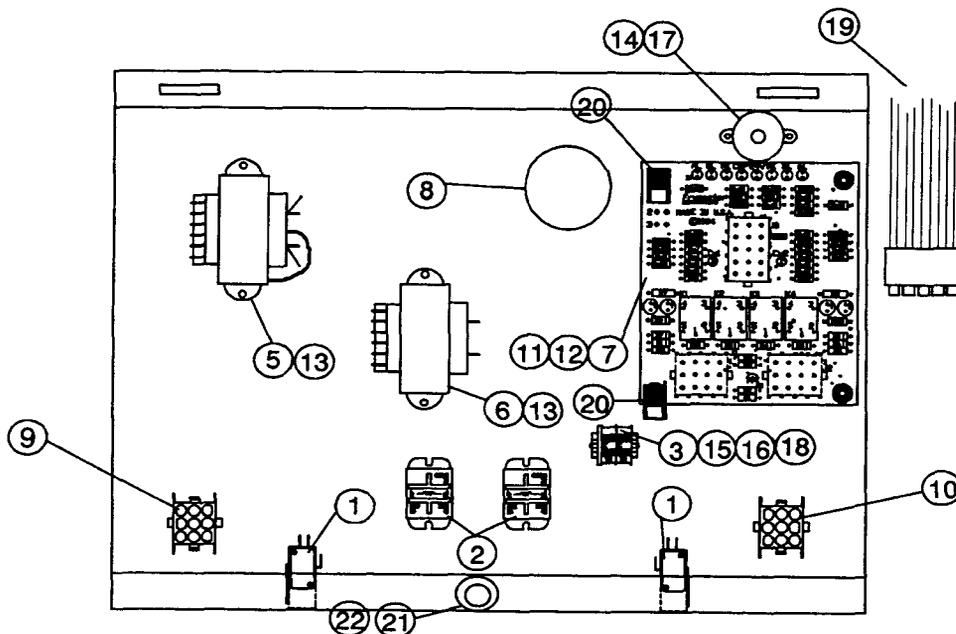


Figure 3-1

Computer/Controller/Timer

Fig.	Part #	*Computer - Controller Assembly	FV	DV	Computer - Controller Only	Fig.	Part #	*Computer - Controller Assembly	FV	DV	Computer - Controller Only
3-2	806 7292	CE CMIII	✓		806 7334	3-2	806 7158	CMIII	✓		806 3737
3-2	806 7293	CE CMIII		✓	806 7334	3-2	806 7159	CMIII		✓	806 3737
3-3	806 7296	CE Digital Controller	✓		806 7320	3-2	806 7162	CMIII EPRI	✓		806 4450
3-3	806 7297	CE Digital Controller		✓	806 7321	3-2	806 7163	CMIII EPRI		✓	806 4450
3-4	806 7298	CE Basket Lift Timer	✓		806 7275	3-3	806 3732	Digital Controller	✓		806 7342
3-4	806 7299	CE Basket Lift Timer		✓	806 7275	3-3	806 3733	Digital Controller		✓	806 3787
3-7	806 8103	CE M100B Electric	✓	✓	806 8101	3-4	806 7168	Basket Lift Timer	✓		806 3739
3-7	806 8044	Non-CE International M100B Electric	✓	✓	806 8037	3-4	806 7169	Basket Lift Timer		✓	806 3739
						3-5	806 7422	Analog Controller	✓		N/A
						3-5	806 7423	Analog Controller		✓	N/A
						3-6	806 7436	McDonald's Controller	✓		N/A
						3-6	806 7437	McDonald's Controller		✓	N/A
						3-7	806 8000	M-100B Electric	✓	✓	806 7991

Bezel

823 0768 - Digital Controller Bezel

823 2307 Bezel - Fits all Computer/Controller/Timers except the Frymaster Digital Controller and McDonald's Analog Controller.

* Computer - Controller Assembly includes the computer/controller and bezel

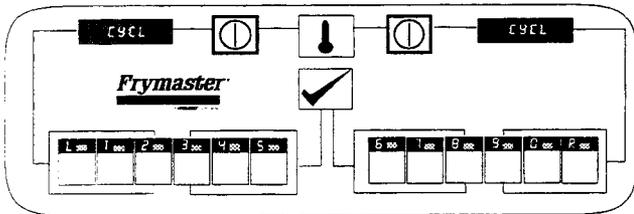


Figure 3-2

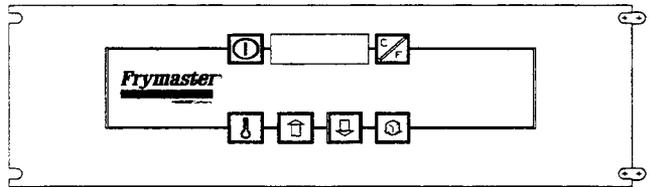


Figure 3-3

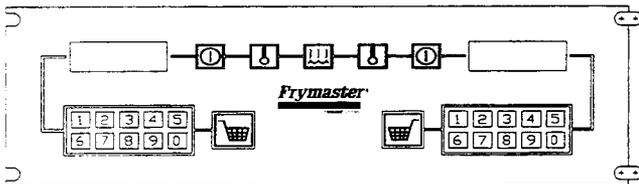


Figure 3-4

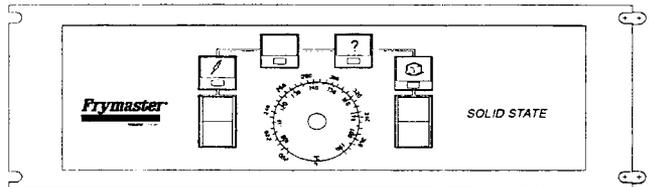


Figure 3-5

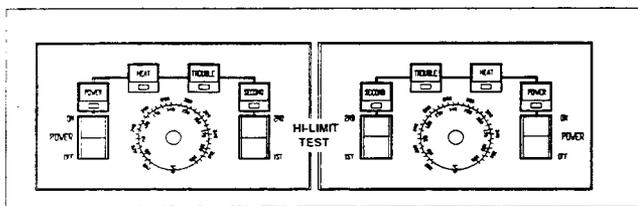


Figure 3-6

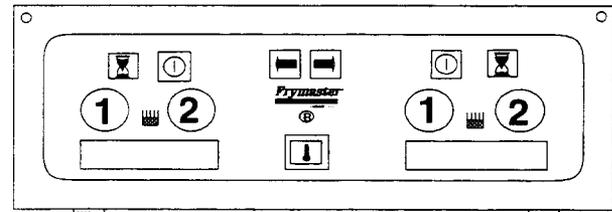
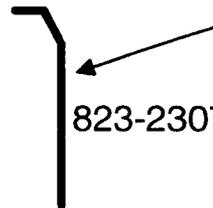


Figure 3-7



823-0768

Original Style Bezel - also fits Frymaster Dig. Controller



823-2307

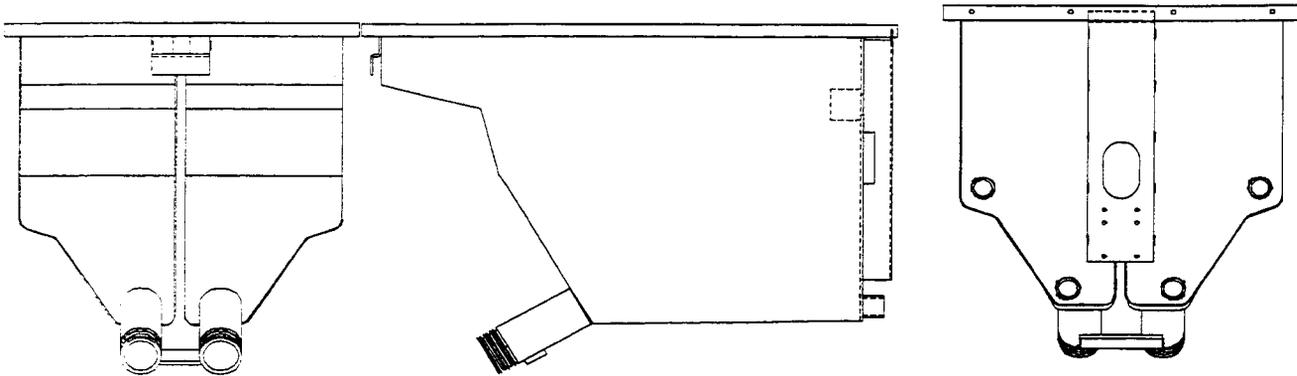
Hidden Screw Style Bezel - Fits all Computers/Cont'lers/Timers except Dig. Cntrl. and McD Cntrl.

Frypot Assembly

See Figure 4-1

EPRI	FV	DV	Filter	Rear Flush	Part No
	✓				823 2450
	✓		✓		823 2451
✓	✓				806 8167
✓	✓		✓		806 8168
	✓		✓	✓	823 2454
✓	✓		✓	✓	806 8169
		✓			823 2458
		✓	✓		823 2459
		✓	✓	✓	823 2460
✓		✓			806 8170
✓		✓	✓		806 8171
✓		✓	✓	✓	806 7445

DV Frypot



EPRI DV Frypot

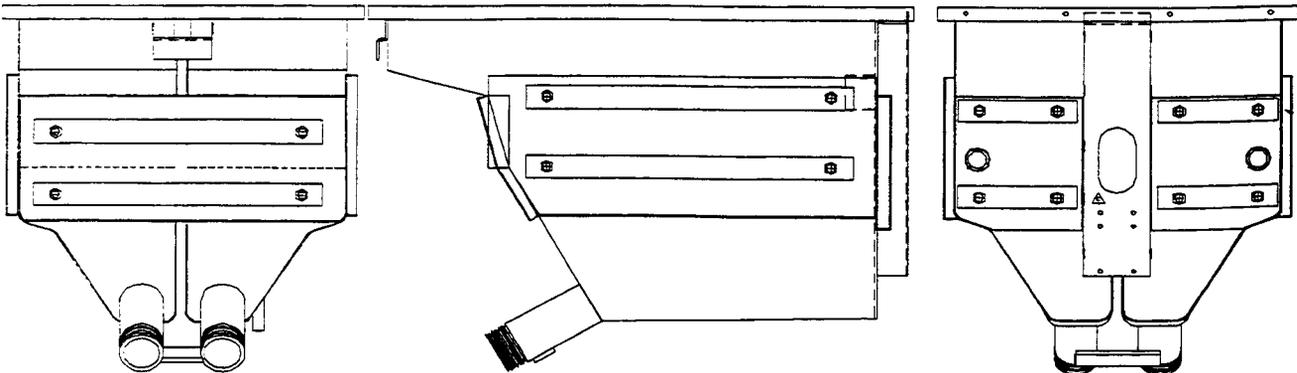


Figure 4-1

FootPrint Filter System

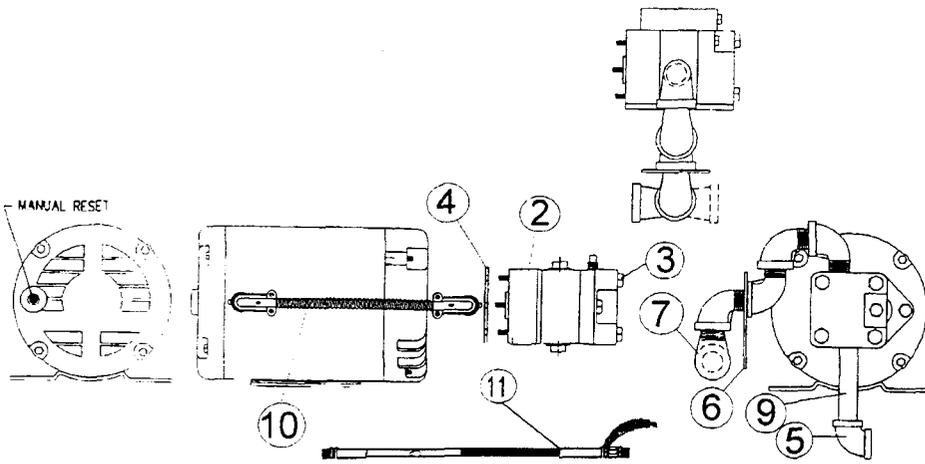


Figure 5-1

	Part No.	Description
Pump/Motor Assembly - See Figure 5-1		
1	826 1263	Motor and Gasket Kit, 115V
1	826 1269	Motor and Gasket Kit, 240V
1	826 1266	Motor and Gasket Kit, 208V
1	826 1270	Motor and Gasket Kit, 250V
1	826 1268	Motor and Gasket Kit, 100V
2	826 1264	Pump and Gasket Kit
3	809 0514	Capscrew
4	816 0093SP	Pump/Motor Gasket
5	813 0062	Elbow, 1/2 90°
6	900 1958	Oil Return Support
7	813 0165	Elbow, 1/2 x 90° Street
9	813 0460	Nipple, 1/2" x 2.5
10	806 6728	Pump Wiring Assembly
*	806 6733	Filter Heater Assy. 250V
*	806 6732	Filter Heater Assy. 240V
*	806 6731	Filter Heater Assy. 120V
*	806 6730	Filter Heater Assy. 100V
11	810 1037	Oil Ret. Hose Pump-Cabinet 240v
11	810 0945	Oil Ret. Hose Pump-Cabinet 120v

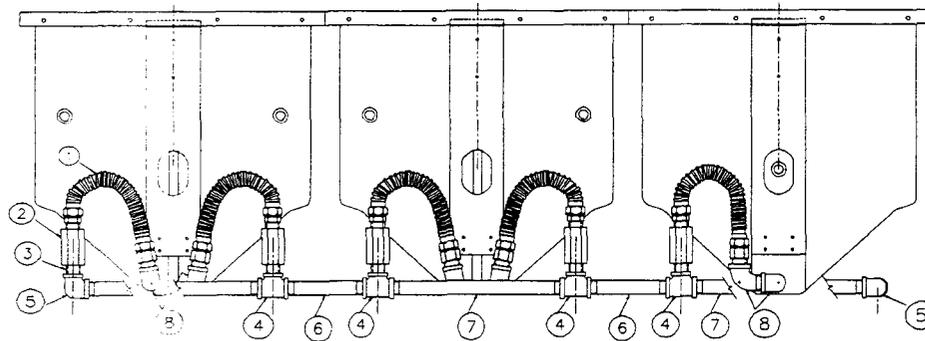


Figure 5-2

	Part No.	Description
Rear Flush Plumbing - See Figure 5-2		
1	810 1067	Oil Return Flexline 11" (BIH14)
1	810 1159	Oil Return Flexline 7.5" (F14/17/22)
2	810 0278	Ball Valve 1/2
3	813 0022	Nipple 1/2 x Close
4	813 0003	Tee 1/2 NPT
5	813 0062	Elbow 1/2 90°
6	813 0509	Nipple 1/2 x 14.5"
7	813 0275	Nipple 1/2 x 9"
8	813 0331	Elbow 1/2 with side outlet
*	813 0093	Nipple 1/2 x 4"
9	813 0165	Elbow 1/2 90°
*	806 5931	36" Heater Tape Assy, 120V, 25W
*	806 5932	36" Heater Tape Assy, 240V, 45W
*	806 5933	18" Heater Tape Assy., 120V, 25W
*	806 5934	18" Heater Tape Assy., 240V, 25W

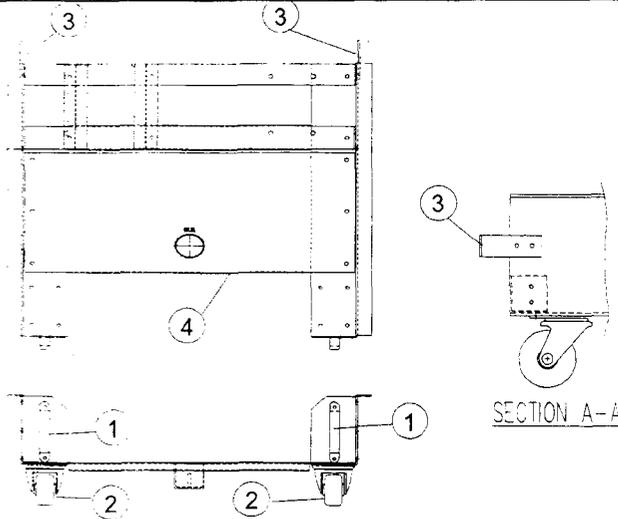
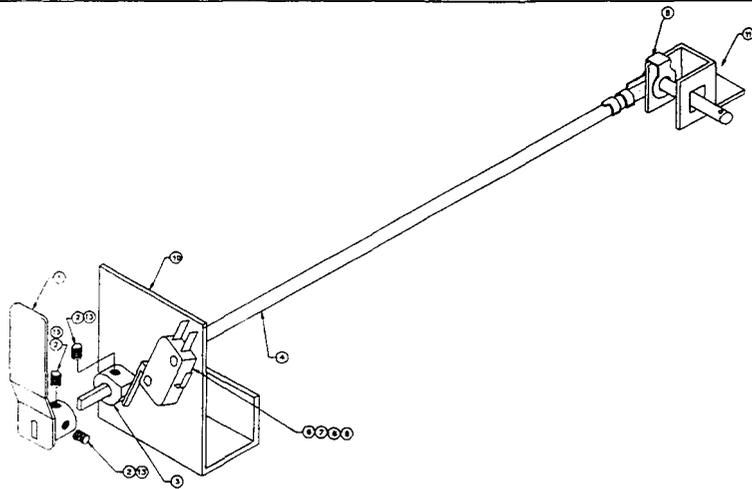


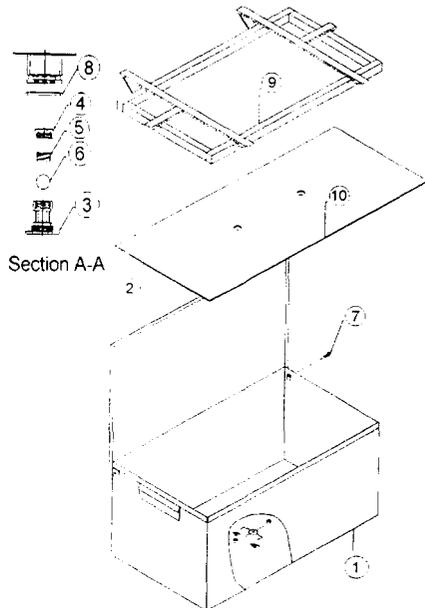
Figure 5-3

	Part No.	Description
Filter Base Assembly - See Fig. 5-3		
*	806 5985	Filter Base Assembly
1	810 0019	Filter Base Handle
2	810 0949	Filter Base Swivel Caster
*	826 1374	Screw (Qty. of 25)
*	809 0375	Nut, 5/16
*	809 0194	Washer, 5/16
3	900 1953	Filter Lock Bracket
4	823 2289	Filter Pan Support



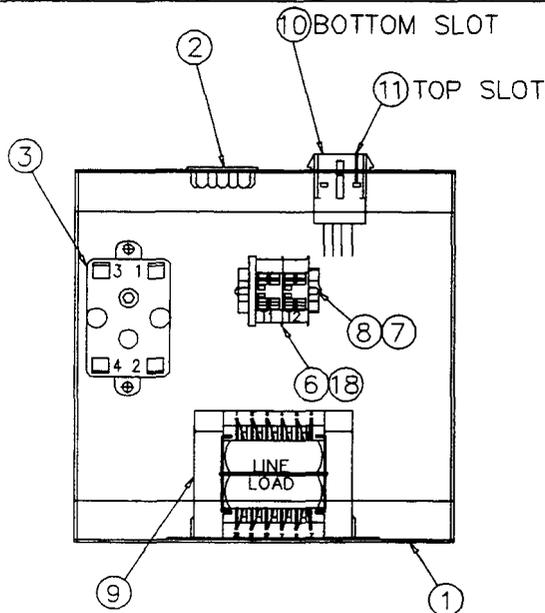
Oil Return Linkage Assembly - See Figure 5-4		
1	823 2338	Oil Return Handle Right
1	823 2337	Oil Return Handle Left (Shown)
2	826 1377	Set Screw 10-32 x ¼ (Qty. of 25)
3	810 1186	Microswitch Cam
4	810 1180	Rotating Arm Shaft
5	809 0601	Clevis Clip
6	807 2103	Microswitch
7	816 0222	Fish Paper
8	826 1359	Screw, 4-40 x ¾ (Qty. of 25)
9	809 0238	Nut Hex, 4-40
10	900 2571	Microswitch Bracket
11	901 2772	Rear Flush Valve Handle
12	809 0359	Screw
13	815 0789	Loctite Threadlocker 242

Figure 5-4



Footprint III Filter Pan Asmby. - See Fig. 5.5		
*	806 6423	Filter Pan Assembly (McDonald's)
*	806 5618	Filter Pan Assembly
1	823 2234	Filter Pan (McDonald's)
1	823 1979	Filter Pan
2	823 2027	Filter Pan Cover
3	810 1388	Check Valve Tube
4	900 5448	Check Valve Strain
5	810 0946	Check Valve Spring
6	810 0948	Check Valve Ball
7	809 0422	Filter Cover Screw
8	816 0181	Check Valve O-Ring
9	823 2235	Hold-Down Ring (McDonald's)
9	823 2083	Hold-Down Ring
10	810 1124	Filter Screen (McDonald's)
10	810 1223	Filter Screen
*	824 0430	Crumb Screen
*	810 1387	Check Valve Retainer

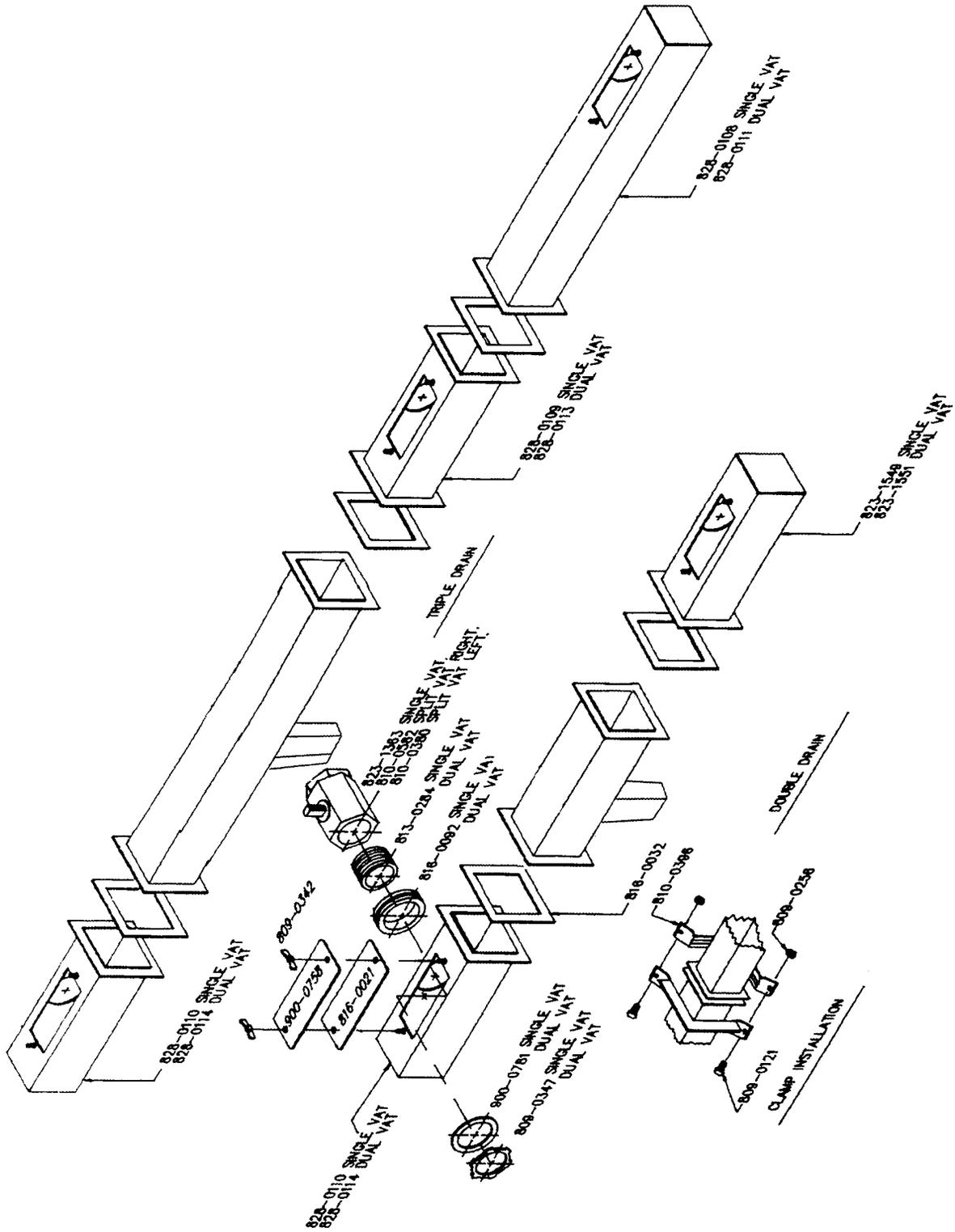
Figure 5-5



Footprint III Filter Box Asmby. - See Fig. 5-6		
1	900 5250	Filter FPIII Box
2	810 0044	7/8 Plug Button
3	807 2434	Relay, 18 Amp 1/3 HP 24V Coil
6	810 1164	Terminal Block
7	826 1359	Screw to secure terminal block
8	826 1366	Nut for terminal block (Qty. of 25)
9	807 2176	Xformer, 100/120V - 12/24V
9	807 1999	Xformer, 208-250V - 12/24V
10	806 6719	Plug Assembly Bottom Slot
10	806 6725	Plug Assembly Top Slot
18	816 0217	Terminal Blk Insulating Paper (CE)

Figure 5-6

FootPrint Square Drain System



Filter Magic II

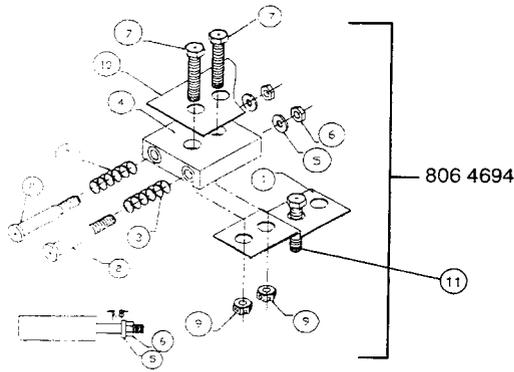


Figure 5-7

Contactor Block Assembly - See Figure 5-7		
Item	Part Number	Description
*	806 4694	Contact Block Assembly
1	900 1521	Control Block Bracket
2	810 0693	Contact Spring Pin
3	810 0696	Contact Spring
4	810 0694	Contact Block
5	809 0185	Washer #10
6	809 0053	Nut 10-32
7	809 0291	Screw ¼-20 x 1½
9	826 1372	Nut ¼ - 20 (Qty. of 10)
10	816 0126	Contact Shield
11	826 1389	Screw, ¼-20 X ¾ (Qty. of 10)

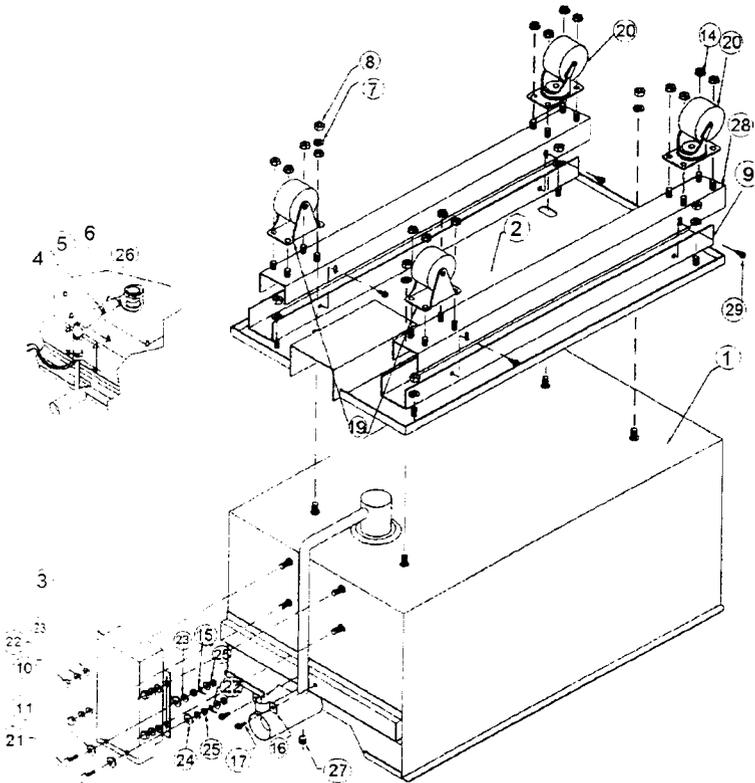


Figure 5-8

Outer Pan Assembly - See Figure 5-8		
1	823 1360	Drain Pan Assembly
2	823 2332	Filter Pan Base
3	824 0582	Suction Tube Cover
4	806 4737	Pan Heater
5	811 0746	Foil Tape
6	810 0441	Clamps
7	809 0189	Washer ¼"
8	826 1362	Nut ¼ -20 (Qty. of 10)
9	900 2805	Caster Lift Base Channel
10	809 0020	Nut 10-24
11	807 1270	Washer
12	816 0098	Filter Contacts Insulator
13	809 0120	Screw 10-32 x ½
14	809 0256	Nut 10-32
15	807 0037	Tab
16	910 1350	Suction Tube Clamp
17	826 1371	Drill Screw (Qty. of 25)
18	811 0511	RTV
19	810 0005	Rigid Caster
20	810 0006	Swivel Caster
21	810 0695	Pan Contact
22	809 0184	Washer #10 Lock
23	809 0185	Washer #10 Flat
24	807 1367	Washer, Flat Non-conductive
25	809 0053	Nut, 10-32 Hex
26	811 0861	Insulation
27	813 0411	Pipe Plug 1/8
28	900 2806	Caster Mounting Channel
29	826 1374	Screw, #10 - ½ Hex (Qty-25)

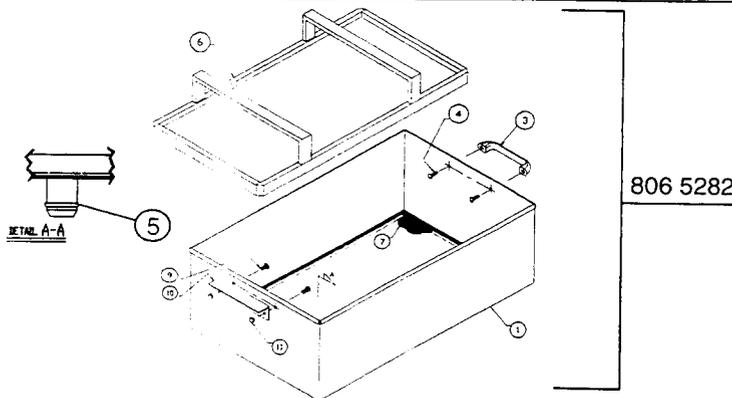


Figure 5-9

FM II Inner Pan Assy. - See Figure 5-9		
1	823 1731	Inner Pan
3	810 0180	Filter Pan Handle
4	826 1360	Screw (Qty. of 25)
5	816 0117	O-Ring
6	823 2092	Hold Down Ring
7	810 1229	Filter Screen
8	815 0789	Loctite 242
9	826 1330	Screw (Qty. of 25)
10	910 1366	Inner Pan Handle
11	809 0045	Nut 10-32 Cap

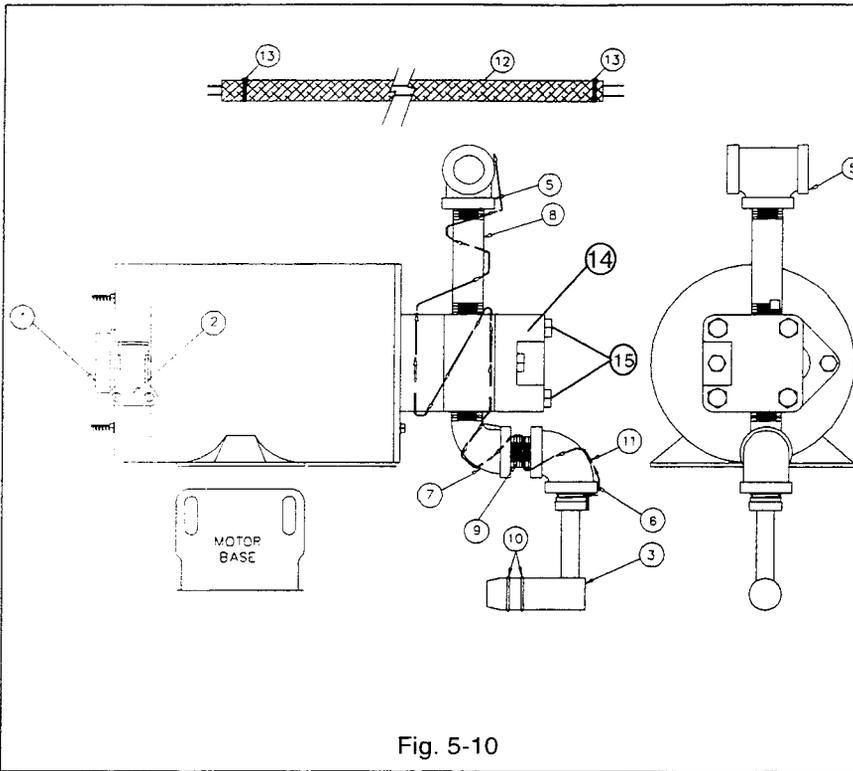


Fig. 5-10

FMII Pump/Motor Assembly - See Fig. 5-10

Item	Part #	Description
1	826 1263	Motor and Gasket Kit, 115V
1	826 1269	Motor and Gasket Kit, 230V
1	826 1266	Motor and Gasket Kit, 208V
1	826 1270	Motor and Gasket Kit, 250V
1	826 1268	Motor and Gasket Kit, 100V
2	807 0141	Connector
3	823 1356	Male Disconnect
4	807 0857	Terminal
5	813 0003	Tee, 1/2 x 1/2 x 1/2
6	813 0062	Elbow, 1/2
7	813 0165	Elbow, 1/2 Street
8	813 0265	Nipple, 1/2 x 2 1/2
9	813 0087	Nipple, 1/2 x 1 1/2
10	816 0012	O-Ring
11	807 1420	Heater, 120V, 45W
11	807 1419	Heater, 240V, 60W
12	812 0419	Insulator
13	810 0015	Inline Connector
14	826 1264	Pump and Gasket Kit
15	809 0514	Capscrew

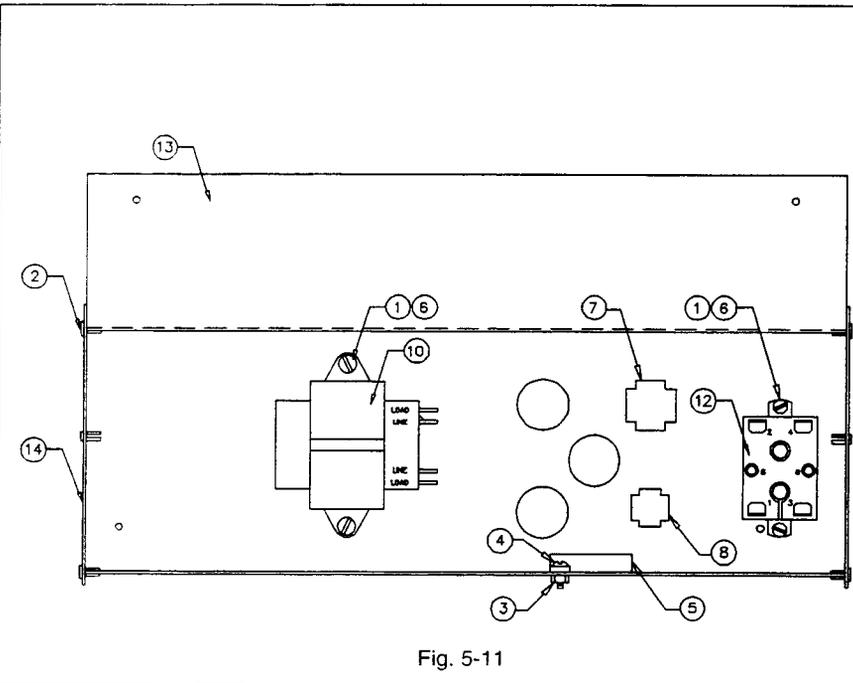


Fig. 5-11

Filter Control Box - See Fig. 5-11

Item	Part #	Description
1	826 1363	Screw 8-32 x 1/2 (Qty. of 25)
2	809 0172	Fastener
3	826 1366	Nut, Hex 4-40 (Qty. of 25)
4	809 0328	Screw 4-40 x 1/4
5	806 4358	Pan Heater Light Resistor
6	809 0050	Nut 8-32
7	806 6203	9 Pin Plug Ass'y
8	806 6204	6 Pin Plug Ass'y
10	807 0800	Xformer, 120 50/60 Hz, 24V, 50VA
10	807 0680	Xformer, 240V 50/60 Hz, 24V, 50VA
10	807 1238	Xformer, 100V 50/60 Hz, 24V, 50VA
12	807 0012	Relay 15 AMP, 1/3 HP 24VCoil
13	900 2250	Control Box Standard Filter Magic
13	900 2251	Control Box Under Counter FM
14	900 0896	FM Control Box End
15	WIR0250	FM Control Box Wire Assembly

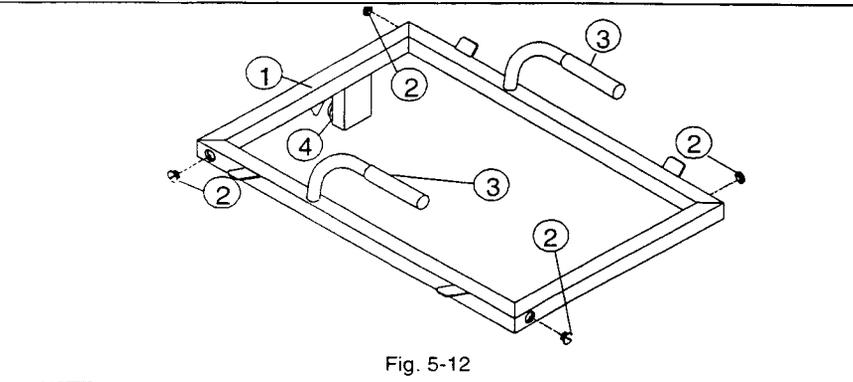


Fig. 5-12

Power Shower - See Fig. 5-12

1	806 4527	Power Shower Assembly DV
1	806 4505	Power Shower Assembly FV
2	809 0415	Clean-out Screw
3	814 0001	Handle Grip
4	816 0026	Power Shower Seal

Drain Valve Assemblies

Item	Part No.	Description		
Drain Valve Assembly - See Figure 6-1				
Full Vat				
1	810 1020	1.25" Drain Valve		
2	900 2825	Microswitch Drain Mount		
3	814 0047	Handle Grip		
4	900 2609	Drain Valve Handle		
5	826 1366	Nut, 4-40 Hex. (Qty. of 25)		
6	807 2103	Microswitch		
7	816 0220	Microswitch Bracket Insulation		
8	900 1420	Microswitch Cover		
10	809 0540	Lock Nut, 1/2-13		
Dual Vat				
			Right	Left
1	810 1338	1" Drain Valve	✓	
2	806 8195	Micro Drain Mount	✓	
2	806 8194	Micro Drain Mount		✓
3	814 0047	Handle Grip	✓	
4	900 2607	Drain Valve Handle		✓
4	900 2608	Drain Valve Handle - Right	✓	
5	826 1366	Nut, 4-40 Hex. (Qty. of 25)	✓	
6	807 2104	Microswitch	✓	
7	816 0220	Microswitch Bracket Insulation	✓	
8	901 2348	Microswitch Cover	✓	
9	810 1165	Washer	✓	
10	809 0539	Nut, Lock 3/8-16	✓	

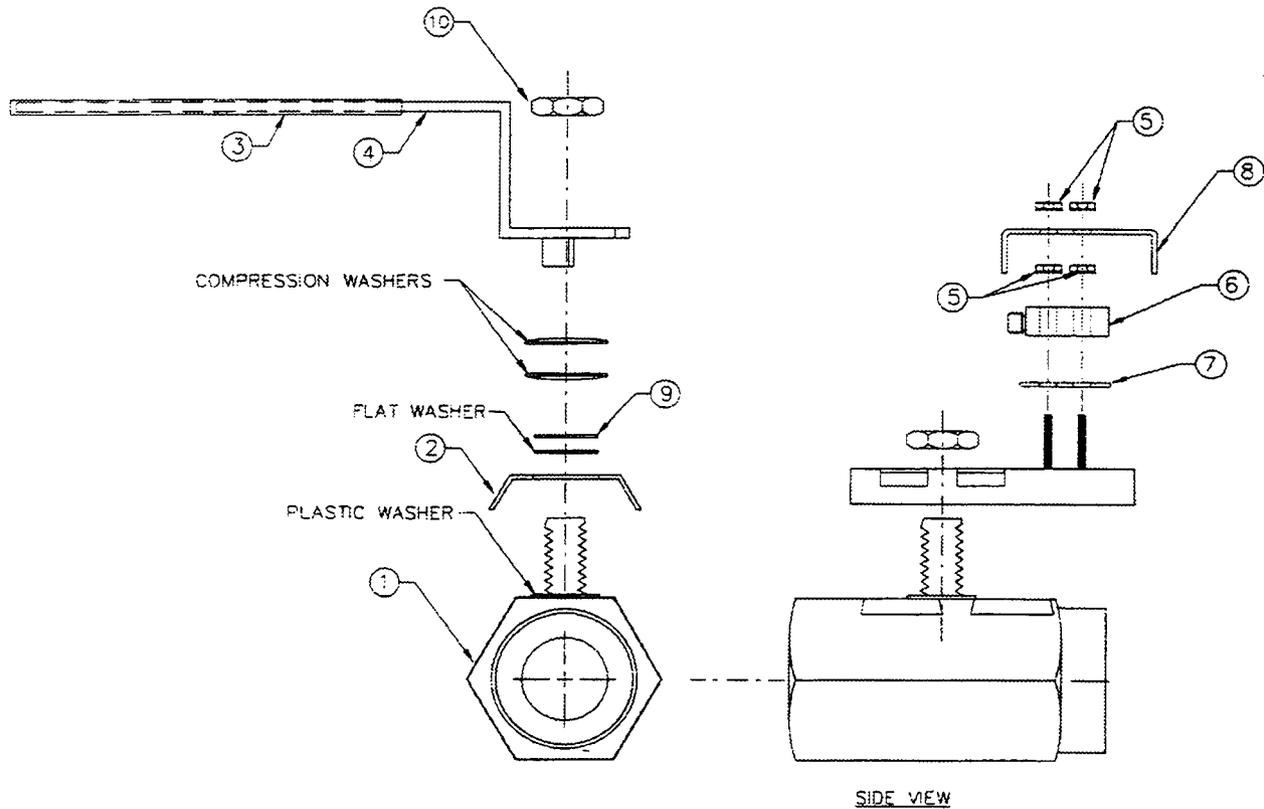
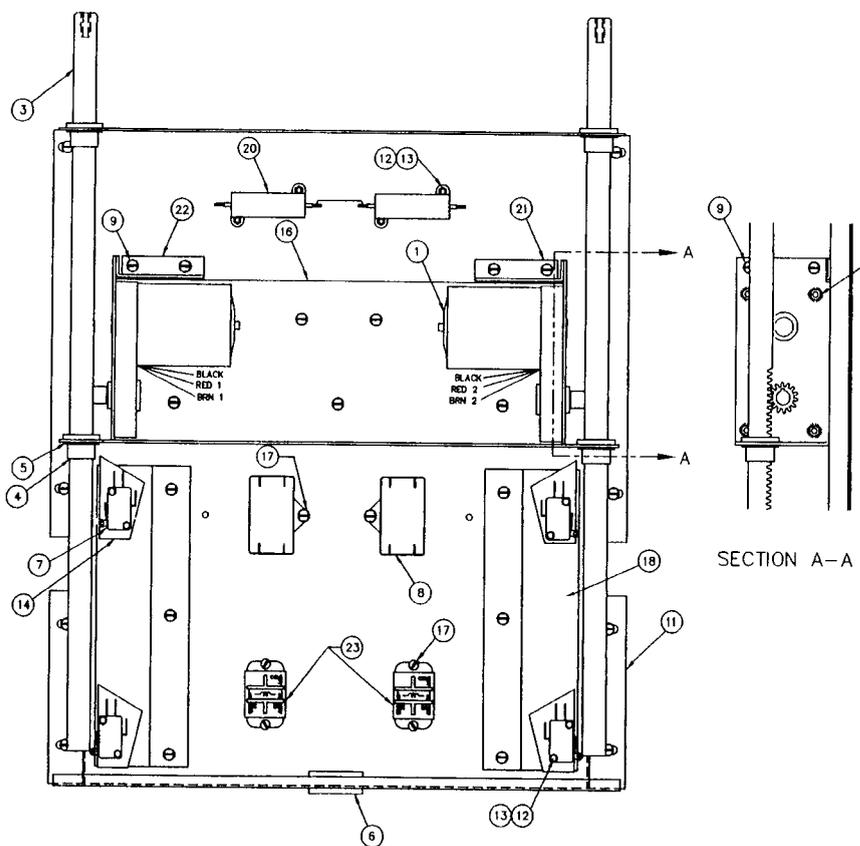


Figure 6-1
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Modular Basket Lift System 200/208/220 Volts with Relay

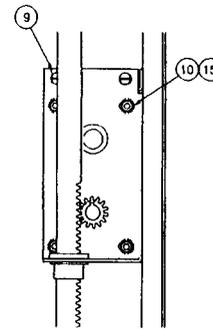
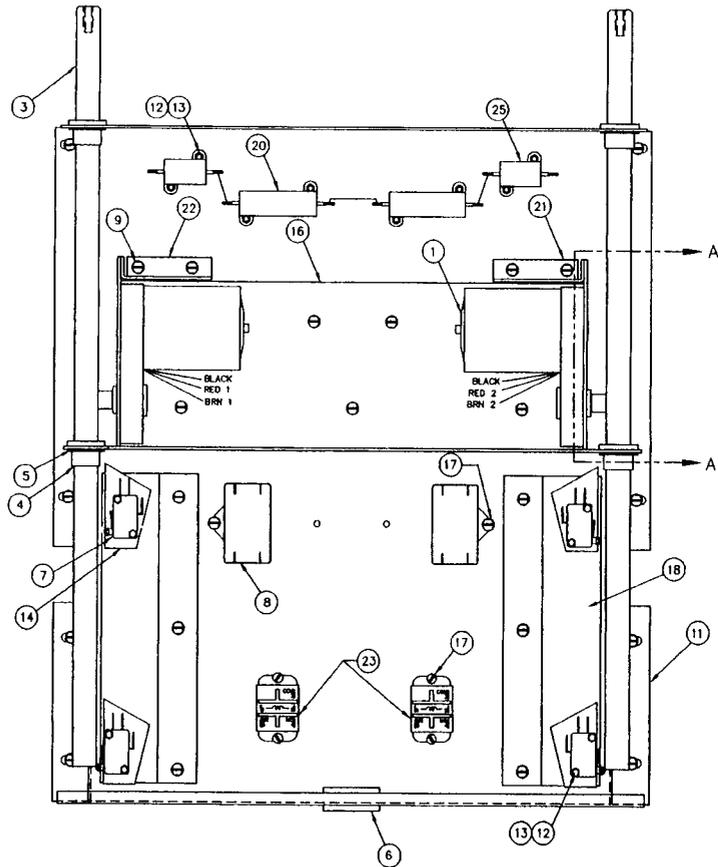
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23	8071683	A	2	RELAY, 12V DC
22	9022134	B	1	GUSSET, MOTOR MOUNT - MOD BL
21	9012134	B	1	GUSSET, MOTOR MOUNT - MOD BL
20	8072512	B	2	RESISTOR, 208V MODULAR BL
19	WR0166	-	1	WIRE ASSY, MOD BL
18	9002421	B	2	MOUNT, MICROSWTCH LEFT
17	8090361	B	6	SCREW, DRILL #8x1/2-1/4 HX HD CAD PL
16	9004777	B	1	MOUNT, MOTOR MOD BL
15	8090186	A	8	WASHER, LOCK #8 w/EXT TOOTH
14	8120442	A	4	INSULATION, SAFETY DRAIN BOX
13	8090237	A	16	NUT, KEPS 4-40 w/EXT TOOTH
12	8090354	A	16	SCREW, 4-40 X .75 RD HD CAD PLTD
11	9007655	B	1	MOUNT, MOD BL
10	8090503	A	8	SCREW, #8-32 x 1/2 HX HD ZP
9	8090412	A	27	SCREW, #10-1/2" HEX HD
8	8072513	B	2	CAPACITOR, MOTOR RUN 12.5MFD, 330VAC
7	8072104	B	4	MICROSWTCH, ROLLER ACTIVATED
6	8070158	A	1	CONNECTOR, FEMALE, 6 PIN #1-480705-0
5	8090082	A	4	RING, RETAINING, TRUARC 3/4 ZN DPPD
4	8130035	A	4	BUSHING, BRONZE, BUNTING 641
3	8101012	B	2	ROD, MOD BL
2	8071948	B	4	TY WRAP, 4.58" (NOT SHOWN)
1	8068078	B	2	MOTOR ASSY, MOD BL 208/220/240V
ITEM	PART NO	SIZE	QTY	DESCRIPTION

Modular Basket Lift System 230-250 Volts with Relay

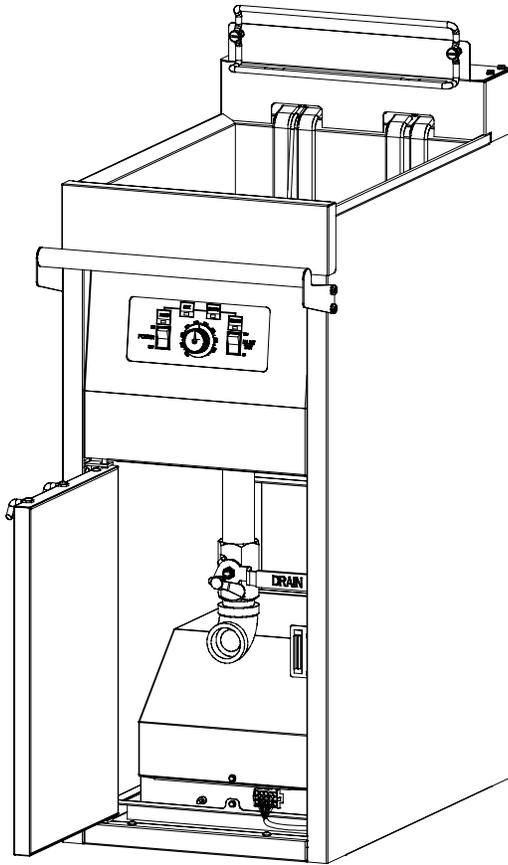
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SECTION A-A

25	8072511	B	2	RESISTOR, 25 WATT 25 OHM
24	8070015	B	2	INLINE CONNECTOR, #1-321235-0
23	8071683	A	2	RELAY, 12V DC
22	9022134	B	1	GUSSET, MOTOR MOUNT - MOD BL
21	9012134	B	1	GUSSET, MOTOR MOUNT - MOD BL
20	8072512	B	2	RESISTOR, 240V MODULAR BL
19	WIR0166	-	1	WIRE ASSY, MOD BL
18	9002421	B	2	MOUNT, MICROSWITCH LEFT
17	8090361	B	6	SCREW, DRILL #8x1/2-1/4 HX HD CAD PL
16	9004777	B	1	MOUNT, MOTOR MOD BL
15	8090186	A	8	WASHER, LOCK #8 w/EXT TOOTH
14	8120442	A	4	INSULATION, SAFETY DRAIN BOX
13	8090237	A	16	NUT, KEPS 4-40 w/EXT TOOTH
12	8090354	A	16	SCREW, 4-40 X .75 RD HD CAD PLTD
11	9007655	B	1	MOUNT, MOD BL
10	8090503	A	8	SCREW, #8-32 x 1/2 HX HD ZP
9	8090412	A	27	SCREW, #10-1/2" HEX HD
8	8072513	B	2	CAPACITOR, MOTOR RUN 12.5MFD, 330VAC
7	8072104	B	4	MICROSWITCH, ROLLER ACTIVATED
6	8070158	A	1	CONNECTOR, FEMALE, 6 PIN #1-480705-0
5	8090082	A	4	RING, RETAINING, TRUARC 3/4 ZN DPPD
4	8130035	A	4	BUSHING, BRONZE, BUNTING .641
3	8101012	B	2	ROD, MOD BL
2	8071948	B	4	TY WRAP, 4.58" (NOT SHOWN)
1	8068078	B	2	MOTOR ASSY, MOD BL 208/220/240V
ITEM	PART NO	SIZE	QTY	DESCRIPTION

**NAVY SUBMARINE
ELECTRIC FRYER**
Installation, Operation, Service, and Parts Manual



Frymaster, a member of the Commercial Food Equipment Service Association, recommends using CFESA Certified Technicians.

24-Hour Service Hotline 1-800-551-8633

FEBRUARY 2004

*** 8196030 ***

NOTICE

IF, DURING THE WARRANTY PERIOD, THE CUSTOMER USES A PART FOR THIS ENODIS EQUIPMENT OTHER THAN AN **UNMODIFIED** NEW OR RECYCLED PART PURCHASED DIRECTLY FROM FRYMASTER/DEAN, OR ANY OF ITS AUTHORIZED SERVICE CENTERS, AND/OR THE PART BEING USED IS MODIFIED FROM ITS ORIGINAL CONFIGURATION, THIS WARRANTY WILL BE VOID. FURTHER, FRYMASTER/DEAN AND ITS AFFILIATES WILL NOT BE LIABLE FOR ANY CLAIMS, DAMAGES OR EXPENSES INCURRED BY THE CUSTOMER WHICH ARISE DIRECTLY OR INDIRECTLY, IN WHOLE OR IN PART, DUE TO THE INSTALLATION OF ANY MODIFIED PART AND/OR PART RECEIVED FROM AN UNAUTHORIZED SERVICE CENTER.

 DANGER

Copper wire suitable for at least 167°F (75°C) must be used for power connections.

 DANGER

The electrical power supply for this appliance must be the same as indicated on the rating and serial number plate located on the inside of the fryer door.

 DANGER

This appliance must be connected to the voltage and phase as specified on the rating and serial number plate located on the inside of the fryer door.

 DANGER

All wiring connections for this appliance must be made in accordance with the wiring diagrams furnished with the equipment. Wiring diagrams are located on the inside of the fryer door.

 DANGER

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

 WARNING

Do not use water jets to clean this equipment.



**Navy Submarine Electric Fryers
Installation, Operation, Service, and Parts Manual**

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NAVY SUBMARINE ELECTRIC FRYER

CHAPTER 1: INTRODUCTION

1.1 General

Read the instructions in this manual thoroughly before attempting to operate this equipment. This manual covers the Frymaster Navy Submarine Electric Fryer, a 440V 14kW 3-phase fryer that has been specifically configured for use aboard submarines of the U.S. Navy.

1.2 Safety Information

Before attempting to operate your unit, read the instructions in this manual thoroughly.

Throughout this manual, you will find notations enclosed in double-bordered boxes similar to the one below.

 **DANGER**

Hot cooking oil causes severe burns. Never attempt to move a fryer containing hot cooking oil/shortening or to transfer hot cooking oil/shortening from one container to another.

 **CAUTION** boxes contain information about actions or conditions that *may cause or result in a malfunction of your system*.

 **WARNING** boxes contain information about actions or conditions that *may cause or result in damage to your system*, and which may cause your system to malfunction.

 **DANGER** boxes contain information about actions or conditions that *may cause or result in injury to personnel*, and which may cause damage to your system and/or cause your system to malfunction.

Fryers in this series are equipped with two high-temperature detection features that shut off power to the unit by means of an external shunt trip disconnect should the temperature controls fail.

1.3 Controller Information

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. While this device is a verified Class A device, it has been shown to meet the Class B limits. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a shipboard environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications and other electronic devices.

1.4 Shipping Damage Claim Procedure

What to do if this equipment arrives damaged:

Please note that this equipment was carefully inspected and packed by skilled personnel before leaving the factory. The freight company assumes full responsibility for safe delivery upon acceptance of the equipment.

1. File Claim for Damages Immediately—Regardless of extent of damage.
2. Visible Loss or Damage—Be sure this is noted on the freight bill or express receipt and is signed by the person making the delivery.
3. Concealed Loss or Damage—If damage is unnoticed until equipment is unpacked, notify the freight company or carrier immediately and file a concealed damage claim. This should be done within 15 days of date of delivery. Be sure to retain container for inspection.

1.5 Service Information

For non-routine maintenance or repairs, or for service information, contact your local Frymaster Authorized Service Center (FASC). Service information may also be obtained by calling the Frymaster Technical Services Department (1-800-551-8633). The following information will be needed in order to assist you efficiently:

Model Number: _____
Serial Number: _____
Voltage: _____

Also be prepared to describe the specific problem.

RETAIN AND STORE THIS MANUAL IN A SAFE PLACE FOR FUTURE USE.

NAVY SUBMARINE ELECTRIC FRYER

CHAPTER 2: INSTALLATION INSTRUCTIONS

2.1 General

Proper installation is essential for the safe, efficient, trouble-free operation of this appliance. Any unauthorized alteration of this equipment will void the Frymaster warranty.

NOTICE

If this equipment is wired directly into the electrical power supply, a means for disconnection from the supply having a contact separation of at least 3-mm in all poles must be incorporated in the fixed wiring.

NOTICE

This equipment must be positioned so that the plug is accessible unless other means for disconnection from the power supply (e.g., a circuit breaker) is provided.

NOTICE

If this appliance is permanently connected to fixed wiring, it must be connected by means of copper wires having a temperature rating of not less than 167°F (75°C).

NOTICE

If the electrical power supply cord is damaged, it must be replaced by a Frymaster/Dean Factory Authorized Service Center technician or a similarly qualified person in order to avoid a hazard.

DANGER

This appliance must be connected to a power supply having the same voltage and phase as specified on the rating plate located on the inside of the appliance door.

DANGER

All wiring connections for this appliance must be made in accordance with the wiring diagram(s) furnished with the appliance. Refer to the wiring diagram affixed to the inside of the appliance door when installing or servicing this equipment.

DANGER

The appliance area must be kept free and clear of combustible material at all times.

All installation and service on FRYMASTER equipment must be performed by qualified, certified, licensed, and/or authorized installation or service personnel.

Service may be obtained by contacting a local Frymaster/DEAN Factory Authorized Service Center.

In the event of a power failure, the fryer will automatically shut down. If this occurs, turn the power switch OFF. Do not attempt to start the fryer until power is restored.

A clearance of 6 inches (15cm) must be provided at both sides and back adjacent to combustible construction. A minimum of 24 inches (61cm) should be provided at the front of the equipment for servicing and proper operation.

Connections should be made by means of an approved, flexible-metallic or rubber-covered electrical cable and quick-disconnect plug. The fryers may be installed with “hard-wired” connections, but use of quick-disconnect plugs will facilitate service if required. Connections are made to the fryer power input terminal block located in the contactor box in the bottom of the fryer.

⚠ DANGER

Observe the following precautions when connecting the fryer to an emergency cutoff system:

- **Be sure that each fryer is connected to a dedicated set of contacts in the emergency cutoff system.**
- **Do not connect the contacts in series.**
- **Do not connect more than one fryer to each set of contacts.**
- **The contacts MUST be normally closed contacts that open in an emergency.**
- **The contacts CANNOT have an external voltage applied.**

2.2 Power Requirements

MODEL	VOLTAGE	PHASE	WIRE SERVICE	MIN. SIZE	AWG (mm ²)	AMPS PER LEG		
						L1	L2	L3
H14 (Submarine)	440	3	3	8	(10)	19	19	19

NOTICE

If this appliance is permanently connected to fixed wiring, it must be connected by means of copper wires having a temperature rating of not less than 167°F (75°C).

⚠ DANGER

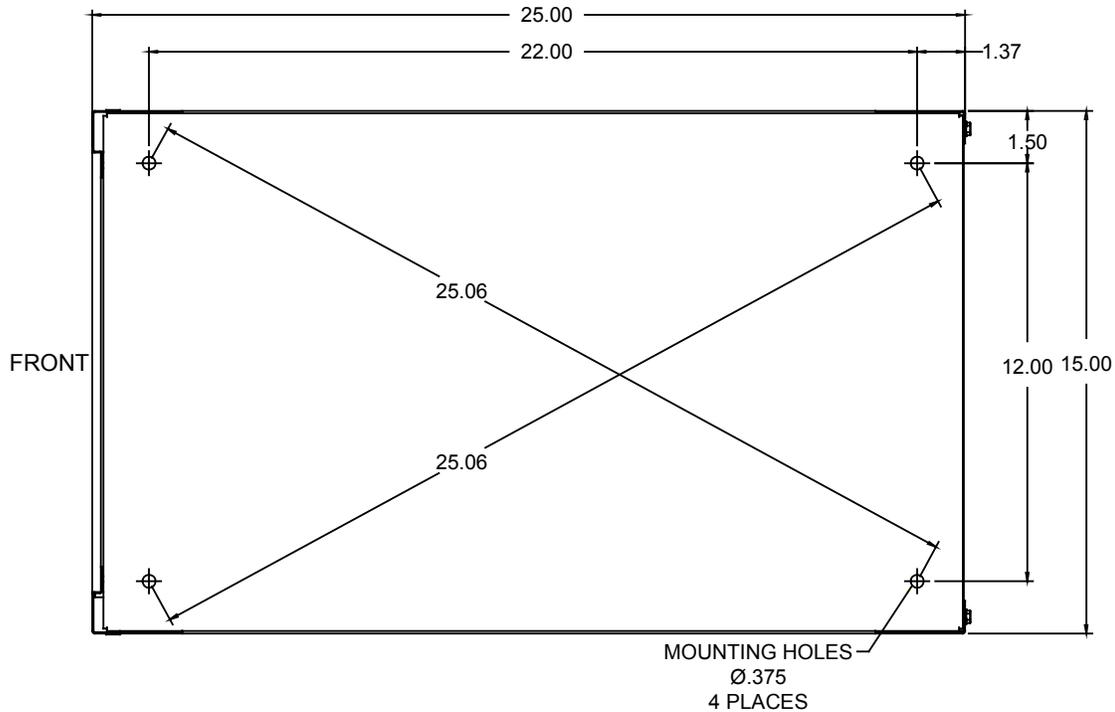
This appliance must be connected to a power supply having the same voltage and phase as specified on the rating plate located on the inside of the appliance door.

⚠ DANGER

All wiring connections for this appliance must be made in accordance with the wiring diagram furnished with the appliance. Refer to the wiring diagram affixed to the inside of the appliance door when installing or servicing this equipment.

2.3 Installation

1. This equipment must be securely bolted to the deck.
2. Install deck studs for the specific fryer configuration in accordance with the diagram below.



3. Position the fryer on the deck studs and secure with appropriate nuts and lock washers.

⚠ DANGER

No structural material on the fryer should be altered or removed to accommodate placement of the fryer under a hood. Questions? Call the Frymaster/Dean Service Hotline at 1-800-551-8633.

2.4 After Fryer is Anchored at the Frying Station

⚠ DANGER

Hot shortening can cause severe burns. Avoid contact. Under all circumstances, oil must be removed from the fryer before attempting to move it to avoid oil spills, falls and severe burns. This fryer may tip and cause personal injury if not secured in a stationary position.

1. Close the frypot drain-valve and fill the frypot with water to the bottom oil level line.
2. Boil out the frypot in accordance with the instructions in Section 5.1.3 of this manual.
3. Drain, clean, and fill the frypot with cooking oil. (See *Equipment Setup and Shutdown Procedures* in Chapter 3.)

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NAVY SUBMARINE ELECTRIC FRYER

CHAPTER 3: OPERATING INSTRUCTIONS

3.1 Equipment Setup and Shutdown Procedures

Setup

 **DANGER**

Never operate the appliance with an empty frypot. The frypot must be filled with water or cooking oil/shortening before energizing the elements. Failure to do so will result in irreparable damage to the elements and may cause a fire.

 **DANGER**

Remove all drops of water from the frypot before filling with cooking oil or shortening. Failure to do so will cause spattering of hot liquid when the oil or shortening is heated to cooking temperature.

1. Fill the frypot with cooking oil to the bottom OIL LEVEL line located on the rear of the frypot. This will allow for oil expansion as heat is applied. Do not fill cold oil any higher than the bottom line; overflow may occur as heat expands the oil.

NOTE: If solid shortening is used, it should be pre-melted outside the frypot then transferred to the frypot. If the solid shortening is not pre-melted, it must be packed down between the elements into the bottom of the frypot.

 **DANGER**

Never set a complete block of solid shortening on top of the heating elements.

When using solid shortening, always pre-melt the shortening before adding it to the frypot. If the shortening is not pre-melted, it must be packed down into the bottom of the frypot and between the elements, and the fryer must be started in the melt-cycle mode.

Never cancel the melt-cycle mode when using solid shortening. Doing so will result in damage to the elements and increase the potential for a flash fire.

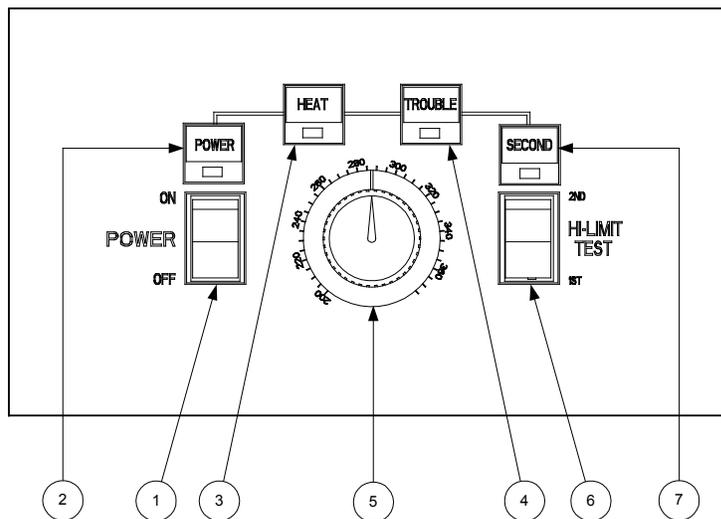
2. If the fryer is not hard-wired into the power supply, ensure that the power cord is plugged into the appropriate receptacle. Verify that the face of the plug is flush with the outlet plate, with no portion of the prongs visible.
3. Ensure that the oil/shortening level is at the *top* OIL LEVEL line when the oil/shortening *is at its cooking temperature*. It may be necessary to add oil/shortening to bring the level up to the proper mark, *after it has reached cooking temperature*.

Shutdown

1. Turn the fryer off.
2. Filter the cooking oil/shortening and clean the fryers (See Chapters 4 and 5).
3. Place the frypot covers on the frypots.

3.2 Operation of the Solid-State Analog Controller

Fryers configured for the U.S. Navy are equipped with solid-state analog controllers, illustrated below.



U.S. Navy Solid-State Analog Controller

ITEM	DESCRIPTION
1	Power Switch – Controls electrical power to fryer.
2	Power-On Light – Indicates when electrical power to fryer is ON.
3	Heating Mode Light – Indicates when heating element is ON.
4	Trouble Light – Indicates over high-limit or problem in heat control circuitry.
5	Thermostat Control Knob – Sets desired frying temperature.
6	Hi-Limit Test Switch – Tests high-limit thermostat.
7	Second Hi-Limit Test Light – Indicates fryer is in second high-limit test mode.

The analog controller is used to adjust and maintain oil at the temperature indicated by the thermostat knob.

The fryer has two built-in high-limit protection features. If the temperature in the frypot reaches approximately 410°F, the controller opens the heat relay circuit, turning the elements off. If the temperature in the frypot reaches 450°F, a mechanical high-limit shuts off electrical power to the fryer *The operator should periodically test each of the high-limit protection features, using the procedure at the end of this chapter, to verify that they are operating correctly.*

The analog controller has no timing features. The operator must monitor shake and pull times.

CONTROLLER OPERATING PROCEDURE

1. Verify that the thermostat knob is set to the desired cooking temperature.
2. Press the power switch to the ON position. The POWER light will illuminate.

WARNING

Before pressing the power switch to the ON position, ensure that the frypot is properly filled with oil. See Section 3.1.

3. If the frypot temperature is below 180°F, the controller will automatically enter a warm-up cycle (often called a melt cycle). The heating elements will cycle on and off repeatedly, allowing the oil to heat gradually, without scorching. During the warm-up cycle, the heating mode light will alternately illuminate and go off as the elements cycle on and off. Within about 45 minutes, the controller will exit the warm-up cycle and the heating mode light will remain continuously illuminated.
4. When the oil temperature reaches the thermostat knob setpoint, the elements will cycle OFF and the HEAT light will go off, indicating that the fryer is ready for the cooking process to begin.

HI-LIMIT TEST PROCEDURE

Tools Required: One 0-600°F pyrometer with sensing probe or an equivalent high-temperature thermometer.

NOTE: Conduct this test when the fryer will not be needed for about one hour and when the cooking oil is due to be changed (the test will ruin the cooking oil). Start the test with the controller turned ON and with the cooking oil at normal frying temperature. Stir the oil thoroughly to ensure even distribution and temperature.

DANGER

If the expected results (indicated by italics) for Steps 3 and 4 below do not occur, turn off the fryer at the main circuit breaker panel and do not use the fryer until it has been repaired by an authorized technician.

1. Verify that cooking oil is at the bottom OIL-LEVEL line. Add oil if necessary.
2. Turn the power switch ON and set the control knob to the normal frying temperature.
3. Insert the pyrometer probe into the frypot so that its tip is near the temperature probe on the element (i.e., approximately 1½-inch into the oil, near the center of the frypot). Press and hold the high limit test switch in the “1ST” test position until the TROUBLE light illuminates. Release the test switch.

The trouble light should have come on when the temperature was approximately 410°F (± 3°F) and the heating elements should have de-energized (indicated by the HEAT light going out).

4. Press and hold the high limit test switch in the “2ND” test position until the SECOND light illuminates. Release the switch.

The light should have come on when the temperature was between 430°F and 460°F.

*For fryers connected to an external shunt power supply, **all** fryers should have been shut off completely and all control panel lights should have been extinguished. For fryers not connected to an external shunt power supply, only the fryer being tested should have been shut off.*

5. Place the controller power switch in the OFF position.
6. Allow the cooking oil to cool to below normal frying temperature.

When the power switch is again placed in the ON position, the elements should re-energize and the operating thermostat should resume control of the temperature. If the TROUBLE light remains on instead, allow the oil additional time to cool.

NAVY SUBMARINE ELECTRIC FRYER

CHAPTER 4: DRAINING AND FILTERING INSTRUCTIONS

4.1 Introduction

Submarine fryers are not equipped with built-in filtration. They must be manually drained and filtered.

4.2 Draining and Disposing of Waste Oil

Turn the fryer off and allow the oil/shortening to cool to 100°F. Screw the drain extension furnished with the fryer into the drain valve, then open the valve and drain the oil/shortening into the drain pan furnished with the fryer for transport to a disposal container. When draining is finished, close the fryer drain valve securely.



Make sure the fryer is off before draining. Allow the oil/shortening to cool to 100°F before draining into an appropriate container for disposal.

4.3 Filtering

To prolong the life of your cooking oil or shortening and to ensure high quality fried foods, the oil or shortening should be filtered on a routine basis.

The frequency of filtering depends upon how often the oil is used, how much food is fried, and the type of food fried. As a minimum, the oil should be filtered each time the frypot is emptied. However, the more you fry, the more you will need to filter. Frying produces sediment. Sediment accumulation has two effects. First, it reduces the efficiency of the fryer. Second, it has a tendency to scorch, which results in bad tasting food. Food that produces a large amount of sediment, such as breaded fish products, require that the oil be filtered more often than foods such as french-fries, which produce comparatively little sediment.

To aid in the filtering process, a filter cone holder and paper filter cones may be ordered from Frymaster FASCs or kitchen equipment suppliers. To order the cone holder, use P/N 803-0072. To order a box of 50 filters, use P/N 803-0042. To order a case containing 500 filters, use P/N 803-0075.

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NAVY SUBMARINE ELECTRIC FRYER

CHAPTER 5: PREVENTIVE MAINTENANCE

5.1 Cleaning the Fryer

 **DANGER**

Never attempt to clean the fryer during the frying process or when the frypot is filled with hot oil/shortening. If water comes in contact with oil/shortening heated to frying temperature, it will cause spattering of the oil/shortening, which can result in severe burns to nearby personnel.

 **WARNING**

Use a commercial-grade cleaner formulated to effectively clean and sanitize food-contact surfaces. Read the directions for use and precautionary statements before use. Particular attention must be paid to the concentration of cleaner and the length of time the cleaner remains on the food-contact surfaces.

5.1.1 Clean Inside and Outside of the Fryer Cabinet – Daily

Clean inside the fryer cabinet with a dry, clean cloth. Wipe all accessible metal surfaces and components to remove accumulated oil/shortening and dust.

Clean outside the fryer cabinet, with a clean, damp cloth soaked with dishwashing detergent. Wipe with a clean, damp cloth.

5.1.2 Clean the Frypot and Heating Elements – Weekly

 **DANGER**

Never operate the appliance with an empty frypot. The frypot must be filled with water or cooking oil/shortening before energizing the elements. Failure to do so will result in irreparable damage to the elements and may cause a fire.

Boiling-Out the Frypot

Before the fryer is first used, it should be boiled out to ensure that residue from the manufacturing process has been eliminated. Also, after the fryer has been in use for a period of time, a hard film of caramelized vegetable oil will form on the inside of the frypot. This film should be periodically removed by following the boil-out procedure that follows.

1. Before switching the fryer ON, close the frypot drain valve, then fill the empty frypot with a mixture of cold water and dishwashing detergent. Follow instructions on detergent container when mixing.
2. Press the fryer ON/OFF switch to the ON position.
3. Set the temperature control knob to the lowest setting.

4. Simmer the solution for 45 minutes to one hour. Do not allow the water level to drop below the bottom oil-level line in the frypot during the boil-out operation.

 DANGER

Never leave the fryer unattended during the boil-out process. If the boil-out solution boils over, turn the fryer off immediately and let the solution cool for a few minutes before resuming the process.

5. Turn the fryer ON/OFF switch to the OFF position.
6. Add two gallons of water. Drain out the solution and clean the frypot(s) thoroughly.
7. Refill the frypot with clean water. Rinse the frypot twice, drain and dry with a clean towel. Thoroughly remove all water from the frypot and elements before refilling the frypot with cooking oil/shortening.

 DANGER

Remove all drops of water from the frypot before filling with cooking oil or shortening. Failure to do so will cause spattering of hot liquid when the oil or shortening is heated to cooking temperature.

5.1.3 Clean Detachable Parts and Accessories – Weekly

Wipe all detachable parts and accessories with a clean, dry cloth. Use a clean cloth saturated with detergent to remove accumulated carbonized oil/shortening on detachable parts and accessories. Rinse the parts and accessories thoroughly with clean water and wipe dry before reinstalling.

5.2 Check Calibration of Temperature Control Knob – Monthly

1. After the cooking oil/shortening reaches operating temperature, let the heating elements cycle at least four times (indicated by the HEAT light going out and coming back on).
2. Insert a thermometer or pyrometer probe near the temperature-sensing probe approximately three inches deep into the cooking oil/shortening. When the heating elements cycle on for the fourth time, the thermometer should read within $\pm 5^{\circ}\text{F}$ of the temperature control knob setting.
3. If the knob requires adjustment:
 - a. Loosen the setscrew in the control knob until the outer shell of the knob will rotate on the insert inside the knob.
 - b. Rotate the outer shell of the knob until the index line on the knob aligns with the mark that corresponds to the thermometer or pyrometer reading.
 - c. Hold the knob and tighten the setscrew.
 - d. Recheck the thermometer or pyrometer reading and the temperature control knob setting the next time the HEAT light illuminates.

- e. Repeat steps a through d until the thermometer or pyrometer reading and the knob setting agree within 5°F.

5.3 Annual/Periodic System Inspection

This appliance should be inspected and adjusted periodically by qualified service personnel as part of the galley material maintenance management (3M) program.

Frymaster recommends that a Factory Authorized Service Technician inspect this appliance at least annually as follows:

Fryer

- Inspect the cabinet inside and out, front and rear for excessive oil build-up and/or oil migration.
- Verify that the heating element wires are in good condition and that leads have no visible fraying or insulation damage and that they are free of oil migration build-up.
- Verify that heating elements are in good condition with no carbon/caramelized oil build-up. Inspect the elements for signs of extensive dry-firing.
- Verify the heating-element amp-draw is within the allowed range as indicated on the appliance's rating plate.
- Verify that the temperature and high-limit probes are properly connected, tightened and functioning properly, and that mounting hardware and probe guards are present and properly installed.
- Verify that component box and contactor box components (i.e. controller, relays, interface boards, transformers, contactors, etc.) are in good condition and free from oil migration build-up and other debris.
- Verify that component box and contactor box wiring connections are tight and that wiring is in good condition.
- Verify that all safety features (i.e. contactor shields, shunts, reset switches, etc.) are present and functioning properly.
- Verify that the frypot is in good condition and free of leaks and that the frypot insulation is in serviceable condition.
- Verify that all wiring harnesses and wiring connections are tight and in good condition.

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NAVY SUBMARINE ELECTRIC FRYER

CHAPTER 6: OPERATOR TROUBLESHOOTING

6.1 Introduction

This section provides an easy reference guide to some of the common problems that may occur during the operation of this equipment. The troubleshooting guides that follow are intended to help correct, or at least accurately diagnose, problems with this equipment. Although the chapter covers the most common problems reported, you may encounter problems that are not covered. In such instances, the Frymaster Technical Services staff will make every effort to help you identify and resolve the problem.

When troubleshooting a problem, always use a process of elimination starting with the simplest solution and working through to the most complex. Most importantly, always try to establish a clear idea of why a problem has occurred. Part of any corrective action involves taking steps to ensure that it doesn't happen again. If a controller malfunctions because of a poor connection, check all other connections, too. If a circuit breaker continues to trip, find out why. Always keep in mind that failure of a small component may often be indicative of potential failure or incorrect functioning of a more important component or system.

Before calling a service agent or the Frymaster HOTLINE (1-800-551-8633):

- **Verify that electrical cord is plugged in and that circuit breakers are on.**
- **Verify that shunt has not been tripped.**

 **DANGER**

Hot cooking oil/shortening will cause severe burns. Never attempt to transfer hot cooking oil/shortening from one container to another.

 **DANGER**

This equipment should be disconnected from the electrical power supply when servicing, except when electrical circuit tests are required. Use extreme care when performing such tests.

This appliance may have more than one electrical power supply connection point.

Inspection, testing, and repair of electrical components should be performed by authorized personnel only.

6.2 Troubleshooting

6.2.1 Control and Heating Problems

Problem	Probable Causes	Corrective Action
<p>Controller won't activate.</p>	<p>A. Power cord is not plugged in or circuit breaker is tripped.</p>	<p>A. Plug power cord in and verify that circuit breaker is not tripped.</p>
	<p>B. Controller has failed.</p>	<p>B. If available, substitute a controller known to be working for the suspect controller. If the substitute controller functions correctly, order a new controller.</p>
	<p>C. Power supply component or interface board has failed.</p>	<p>C. If any of the components in the power supply system (including the transformer and interface board) fail, power will not be supplied to the controller and it will not function. Determining which component has failed is beyond the scope of operator troubleshooting.</p>
<p>Fryer does not heat.</p>	<p>A. Controller has failed.</p>	<p>A. If available, substitute a controller known to be working for the suspect controller. If the substitute controller functions correctly, order a new controller.</p>
	<p>B. One or more other components have failed.</p>	<p>B. If the circuitry in the fryer control system cannot determine the frypot temperature, the system will not allow the element to be energized or will de-energize the element if it is already energized. If the contactor, element, or associated wiring fails, the element will not energize. Determining which specific component is malfunctioning is beyond the scope of operator troubleshooting.</p>

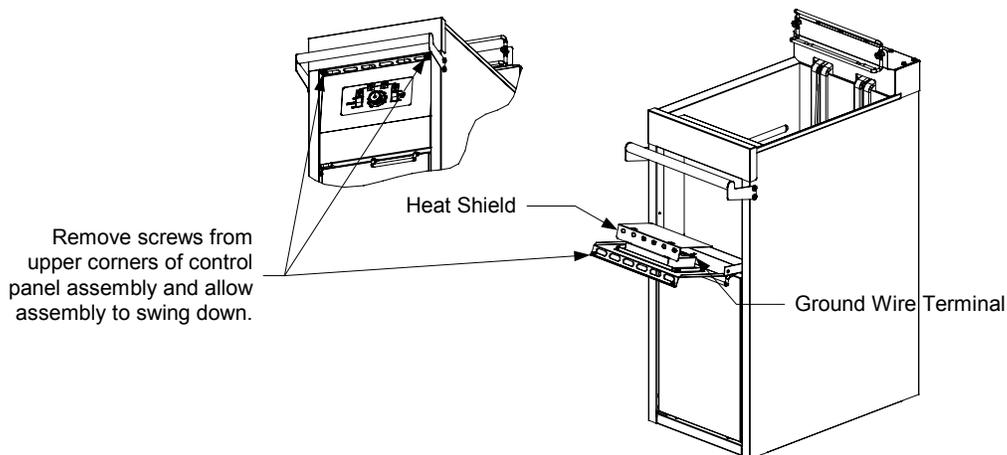
Problem	Probable Causes	Corrective Action
Fryer repeatedly cycles on and off when first started.	Fryer is in melt-cycle mode.	This is normal. The standard operational mode for the controller is for the elements to cycle on and off until the temperature in the frypot reaches 180°F. The purpose of the melt-cycle is to allow controlled melting of solid shortening to prevent scorching and flash fires or damage to the element.
Fryer heats until high limit trips with heat indicator ON.	Temperature probe or controller has failed.	If available, substitute a controller known to be working for the suspect controller. If the substitute controller functions correctly, order a new controller. If substitution of the controller does not resolve the problem, the most likely cause is a failed temperature probe.
Fryer heats until high limit trips without heat indicator ON.	Contactor or controller has failed.	If available, substitute a controller known to be working for the suspect controller. If the substitute controller functions correctly, order a new controller. If substitution of the controller does not resolve the problem, the most likely cause is a contactor failed in the closed position.
Fryer stops heating with heat indicator ON.	The high limit thermostat or contactor has failed.	The fact that the heat indicator is ON indicates that the controller is functioning properly and is calling for heat. The high limit thermostat functions as a normally closed switch. If the thermostat fails, the "switch" opens and power to the elements is shut off. If the contactor fails to close, no power is supplied to the elements. Determining which component has failed is beyond the scope of operator troubleshooting.

6.2.2 Error Messages and Display Problems

Problem	Probable Causes	Corrective Action
Controller trouble light ON.	Oil temperature above acceptable range or a problem with the temperature measuring circuitry.	This is an indication of a malfunction in the temperature measuring or control circuitry, including a failure of the high limit thermostat. Determining the specific problem is beyond the scope of operator troubleshooting. Shut the fryer down immediately.
Controller trouble light ON and heating mode light ON.	Problem with latching circuitry.	The problem is within the latching circuitry and is beyond the scope of operator troubleshooting. Shut the fryer down immediately.

6.3 Replacing the Controller or Controller Cable

1. Disconnect the fryer from the electrical supply, remove the two screws in the upper corners of the control panel assembly and swing the assembly open from the top.



2. Remove the two screws that secure the assembly into the cabinet and pull the assembly out of the fryer.
3. Disconnect the controller cable from the back of the controller.
4. ***If replacing the controller cable***, disconnect it from the front of the contactor box and cut the wire ties that secure it to the wiring bundle. Route the replacement cable, secure it in place with wire ties, and connect it to the controller and the contactor box connections. Reverse steps 1 and 2 to complete the procedure.
5. ***If replacing the controller***, disconnect the ground wire from the terminal on the back of the controller, remove the heat shield from the controller, and remove the controller from the bezel. Install the new controller on the bezel, re-install the heat shield, and reconnect the ground wire and controller cable to the controller. Reverse steps 1 and 2 to complete the procedure.

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CHAPTER 7: SERVICE PROCEDURES

7.1 General

Before performing any maintenance on this equipment, disconnect the fryer from the electrical power supply and drain the frypot.

When electrical wires are disconnected, it is recommended that they be marked in such a way as to facilitate re-assembly.

7.2 Replacing a Controller or Controller Cable

Refer to page 6-4 for the procedure for replacing the controller or controller cable.

7.3 Replacing Contactor Box Components



DANGER

Before performing any replacement of components in the contactor box, disconnect the fryer from the electrical power supply and drain the frypot.

The contactor box is located in the bottom of the fryer cabinet. In some cases, components may be removed without removing the box from the fryer, but in most cases it is best to remove the entire box from the fryer, or at least pull it partially out of the cabinet, for easier access.

The lid to the contractor box is held in place by a single screw (Figure 1 below). The box is attached to the fryer cabinet by means of a single screw on the front of the box and a pair of tabs on the rear of the box that engage slots in the cabinet frame (Figure 2). The door, door magnet, and drain elbow must also be removed to allow the box to be pulled from the cabinet.

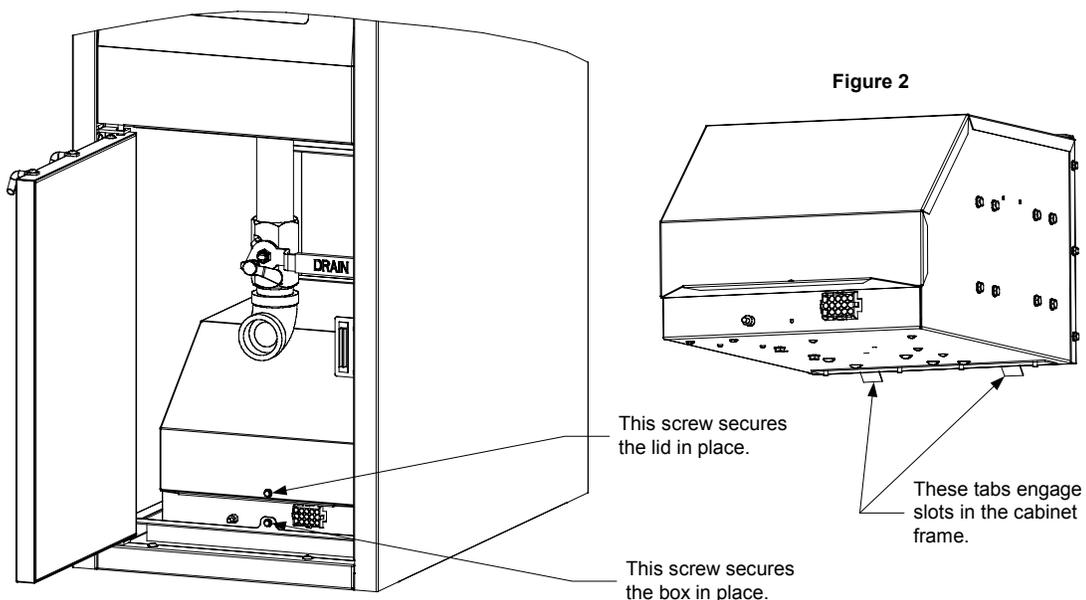


Figure 1

Figure 2

7.3.1 Replacing the Interface Board

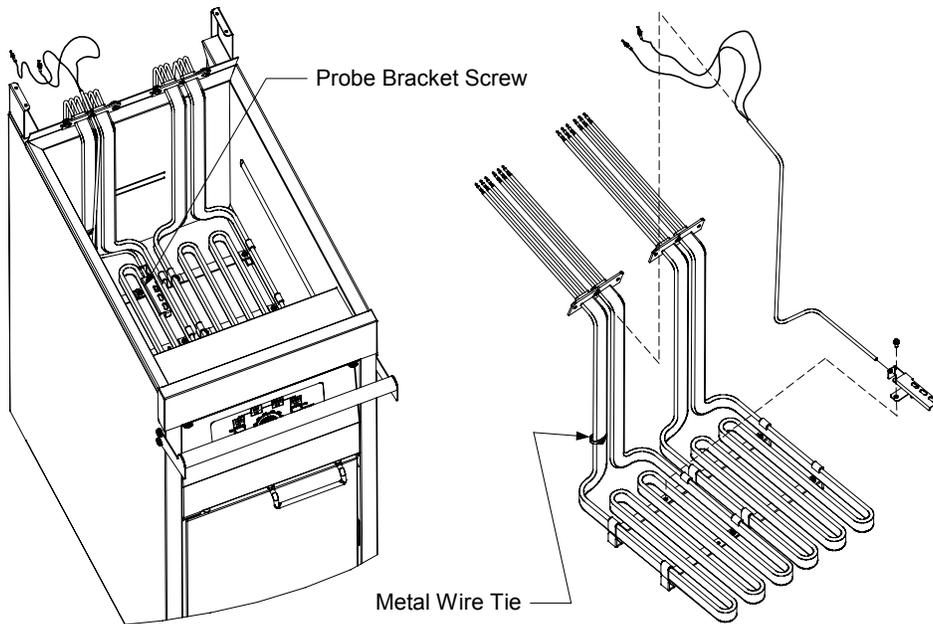
1. Remove the contactor box lid and unplug the wiring harnesses from the front and back of the interface board.
2. Remove the nuts in each corner of the interface board and slide the board off its mounting studs.
3. Verify that the spacers are in place on the studs, then position the replacement board on the studs and re-install the nuts removed in step 2.
4. Reconnect the wiring harnesses and replace the lid to complete the procedure.

7.3.2 Replacing Other Contactor Box Components

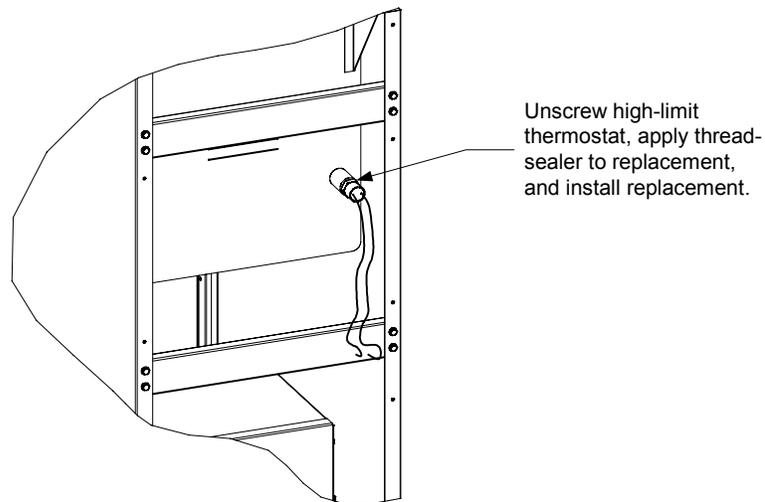
1. Unplug the control cable from the front of the contactor box. Remove the door magnet and drain elbow. Remove the screw that secures the box in place and pull the box from the cabinet to the extent that the wiring allows. If necessary, disconnect the wiring connectors at the rear of the box to allow the box to be removed completely from the cabinet.
2. Disconnect the wiring from the component, being sure to make a note or sketch of the wiring connections. Dismount the component to be replaced and install the new component, being sure that any required spacers, insulation, washers, etc. are in place.
3. Reconnect the wiring disconnected in step 2, referring to your notes and the wiring diagram on the fryer door to ensure that the connections are properly made. Also, verify that no other wiring was disconnected accidentally during the replacement process.
4. Reposition the contactor box in the cabinet and secure in place with the screw removed in step 1. Reinstall the door magnet, drain elbow, and door to complete the procedure.

7.4 Replacing a Temperature Probe or High-Limit Thermostat

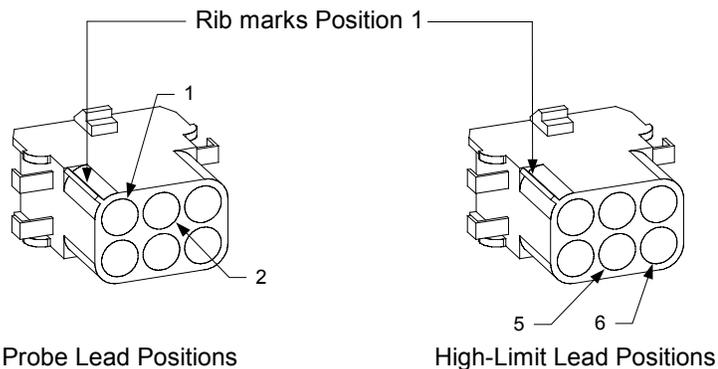
1. Disconnect the fryer from the electrical power supply and drain the frypot into the drain pan provided with the fryer or other appropriate container.
2. Remove the contactor box (see step 1 of section 7.3.2 above). Remove the nuts securing the fryer to the deck and reposition it to gain access to the rear of the fryer.
3. Remove the screws that secure the element housing and back panel to the fryer and remove the element housing and back panel to expose the element assembly and rear of the frypot.
4. Locate connector C7 and disconnect it. Using a pin pusher (Frymaster P/N 8064855), push out the red and white leads if replacing the temperature probe, or the black leads if replacing the high-limit thermostat.
5. *If replacing a temperature probe*, cut the metal wire tie securing the probe to the element, remove the screw securing the probe bracket to the element assembly, and slide the bracket off the probe (see illustration on following page). Pull the probe leads out of the hole in the element assembly and remove the probe from the fryer. Thread the leads of the replacement probe through the hole in the element assembly, position the replacement probe in the element bracket, and reattach the element bracket to the assembly. Secure the upper portion of the probe with a replacement metal wire tie.



If replacing a high-limit thermostat, unscrew the thermostat. Apply Loctite™ PST 567 or equivalent sealant to the threads of the replacement and screw it securely into the frypot.



6. ***If a temperature probe was replaced, insert the probe leads into the connector (see left illustration below). The white lead goes into position 1 and the red into position 2.***

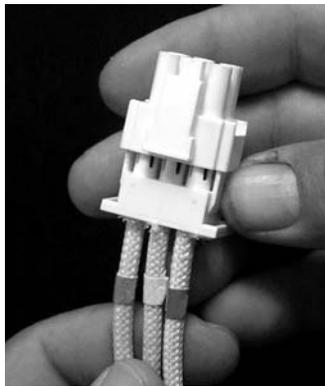


If a high-limit thermostat was replaced, insert the leads into the connector (see right illustration above). The leads go into positions 5 and 6. Polarity does not matter.

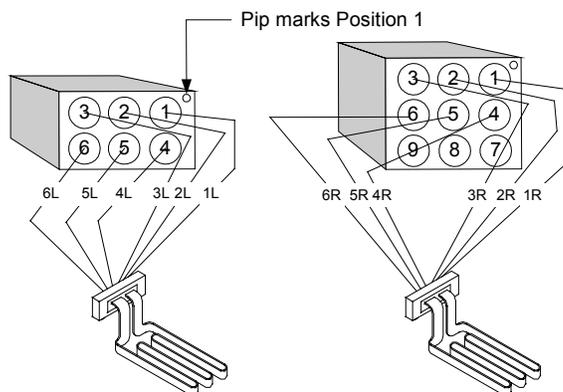
7. Reinstall the back panel and element housing to complete the installation, then reverse steps 1 and 2 to return the fryer to service.

7.5 Replacing a Heating Element

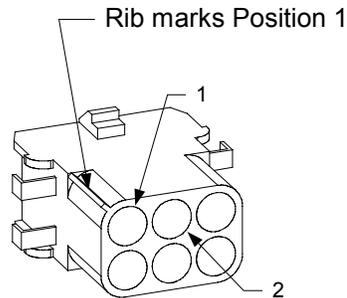
1. Perform steps 1-3 of section 7.4, *Replacing a Temperature Probe or High-Limit Thermostat*.
2. Locate and disconnect connector C7. Using a pin pusher (Frymaster P/N 8064855), push out the red and white leads.
3. On the rear of the contactor box, disconnect the 6-pin and 9-pin connectors.
4. Remove the nuts and machine screws that secure the element assembly to the frypot and lift the assembly out of the frypot. Remove the screws from the appropriate element clamps to separate the element being replaced from the assembly.
5. If the element with the probe is being replaced, recover the probe bracket and probe from the element and install them on the replacement element. Install the replacement element in the assembly using the screws and clamps removed in step 4. Reattach the assembly to the frypot using the original mounting screws and nuts.
6. Press in on the tabs on each side of the connector of the failed element while pulling outward on the free end to extend the connector and release the element leads (see photo below). Pull the leads out of the connector.



7. Press the pins of the replacement element into the connector in accordance with the diagram below, then close the connector to lock the leads in place.



8. Insert the element connectors into the appropriate plug on the rear of the contactor box, ensuring that the latches lock.
9. Insert the temperature probe leads into connector C7 (see illustration below). The white lead goes into position 1 and the red into position 2.



10. Reconnect connector C7 to the wiring harness.
11. Reinstall the back panel and element housing to complete the installation, then reposition the fryer on its deck studs and secure with original nuts and washers.
12. Reconnect the fryer to the electrical power supply, fill with water or cooking oil, and check for proper operation.

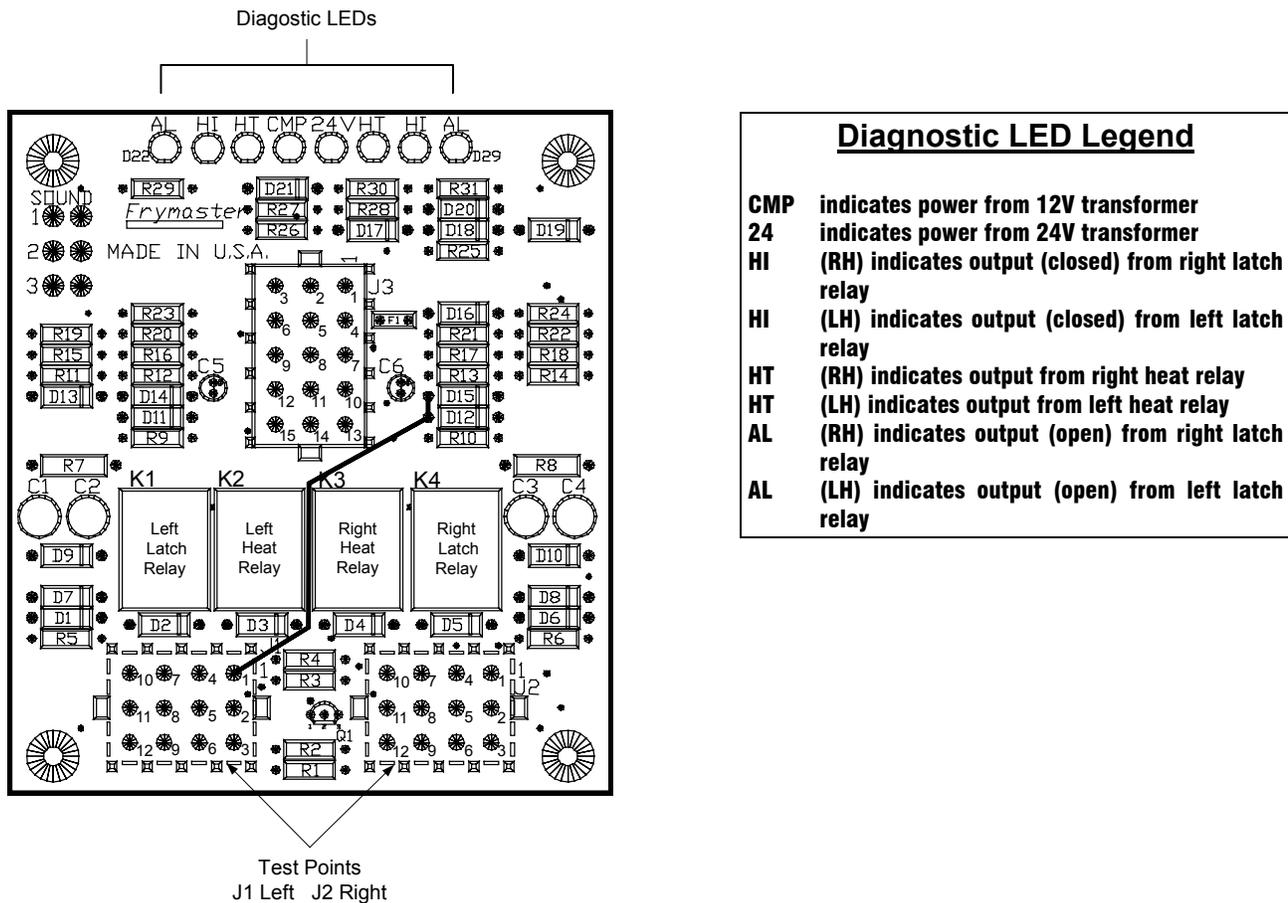
7.6 Replacing a Frypot

1. Disconnect the fryer from the electrical power supply and drain the frypot into the drain pan provided with the fryer or other appropriate container.
2. Remove the contactor box (see step 1 of Section 7.3.2). Remove the nuts securing the fryer to the deck and reposition it to gain access to the rear of the fryer.
3. Remove the screws that secure the element housing and back panel to the fryer and remove the element housing and back panel to expose the element assembly and rear of the frypot.
4. Unplug the 6- and 9-pin connectors from the rear of the contactor box, and locate and disconnect connector C7.
5. Remove the screws from the upper corners of the control panel assembly and allow it to swing down (see illustration on page 6-4). Remove the top cap by lifting it straight up and off the fryer.
6. Remove the machine screws and nuts that secure the element assembly to the frypot and remove it from the frypot.
7. Remove the hex head screw that secures the front of the frypot to the cabinet cross brace.
8. Carefully lift the frypot from the fryer and place it upside down on a stable work surface, being careful not to damage the structures at the rear of the frypot.
9. Recover the drain valve and high-limit thermostat from the frypot. Apply Loctite™ PST 567 or equivalent sealant to the threads of the recovered parts and install them in the replacement frypot.

10. Carefully lower the replacement frypot into the fryer. Reinstall the hex head screw removed in step 7 to attach the frypot to the fryer.
11. Position the element assembly in the frypot and reinstall the machine screws and nuts removed in step 6. Plug the 6- and 9-pin connectors into the contactor box and reconnect connector C7.
12. Reinstall the top cap, back panel, element housing, and back panel and close and secure the control panel assembly.
13. Reposition the fryer on its mounting studs and secure with appropriate nuts and washers.
14. Reconnect the fryer to the electrical power supply, fill the frypot with cooking oil/shortening, and check for proper operation.

7.7 Interface Board Diagnostic Chart

The following diagram and charts provide ten quick system checks that can be performed using only a multimeter.

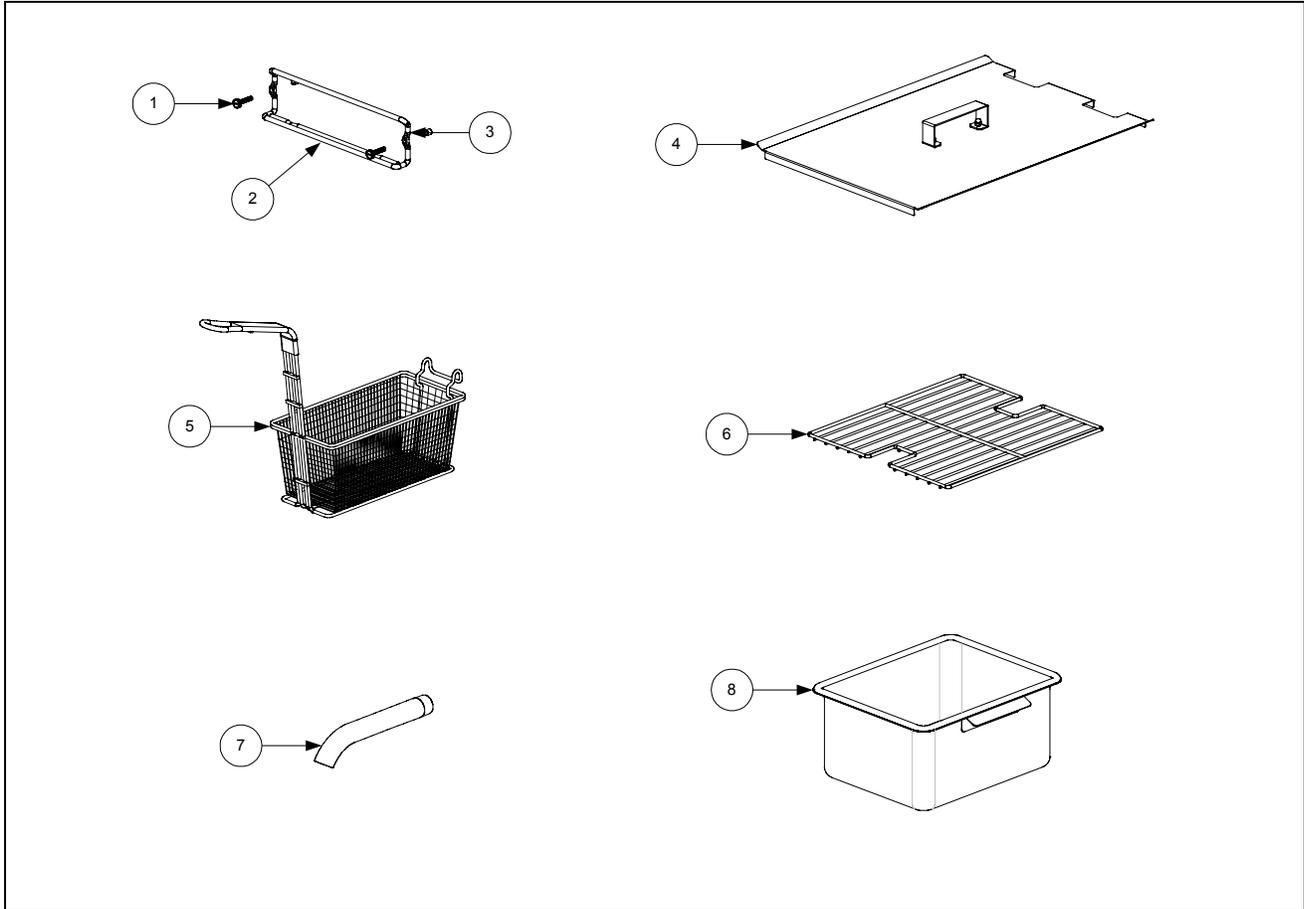


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NAVY SUBMARINE ELECTRIC FRYER

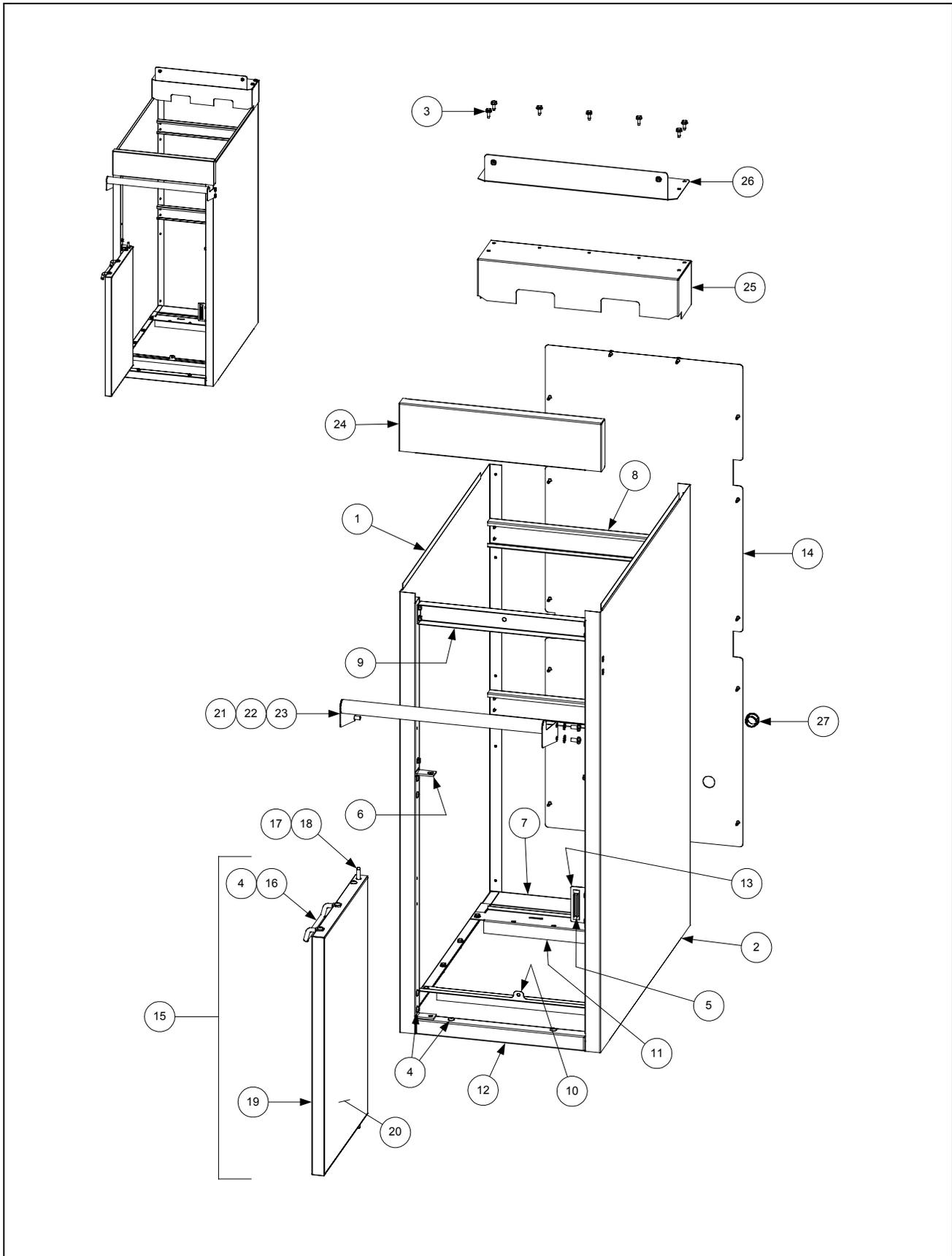
CHAPTER 8: PARTS LIST

8.1 Accessories



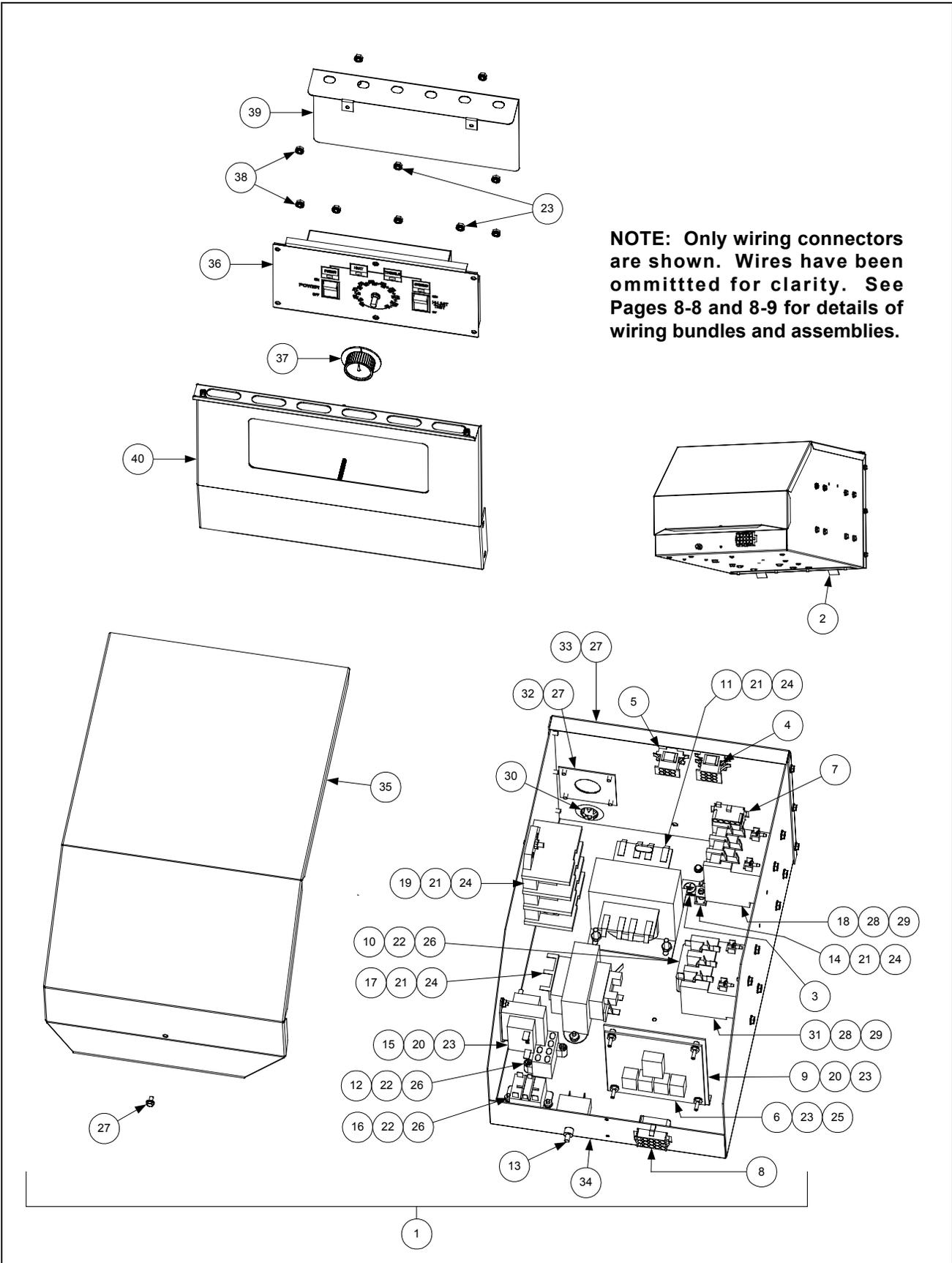
ITEM	PART #	COMPONENT
1	809-0171	Thumbscrew, 1/4 -20 X 1 3/8-inch
2	810-1403	Hanger, Wireform Basket
3	809-0921	Spacer, Basket Hanger
4	806-8558	Cover Assembly, Navy Submarine Frypot
5	812-1386	Basket, Twin
6	803-0132	Rack, Basket Support
7	812-1226	Extension, Drain
8	823-2109	Pan, Submarine Fryer Drain

8.2 Cabinetry



ITEM	PART #	COMPONENT
1	806-9180SP	Side, Submarine Left Cabinet
2	806-9181SP	Side, Submarine Right Cabinet
3	826-1374	Screw, #10 X ½-inch Hex Washer Head (Pkg. of 25)
4	826-1379	Screw, #10 X ½-inch Phillips Truss Head (Pkg. of 10)
5	810-1105	Magnet, Door
6	810-1508	Hinge, Universal Door
7	900-5726	Base, One-Piece Submarine Cabinet
8	900-5742	Brace, Submarine Cabinet Rear
9	900-5743	Brace, Submarine Cabinet Front
10	900-5762	Brace, Submarine Contactor Box Front
11	900-5763	Brace, Submarine Contactor Box Rear
12	910-5754	Panel, Submarine Cabinet Base Cover
13	910-5768	Bracket, Submarine Cabinet Door
14	910-9472	Panel, Submarine Cabinet Back
15	806-8470	Door Assembly, Submarine Cabinet(Items 4 and 16-20)
16	810-1422	Handle, Wireform Door
17	106-0554SP	Pin Assembly, Door
18	810-0275	Spring, Door Pin
19	824-0649	Panel, Submarine Cabinet Door
20	900-5746	Liner, Submarine Cabinet Door
21	823-2718	Handle, Submarine Fryer
22	826-1380	Screw, ¼-20 X ½-inch Slotted Pan Head (Pkg. of 5)
23	809-0192	Washer, ¼-inch Star
24	824-0697	Topcap, Submarine Fryer
25	824-0638	Housing, Submarine Element
26	806-9166SP	Support, Submarine Basket Hanger

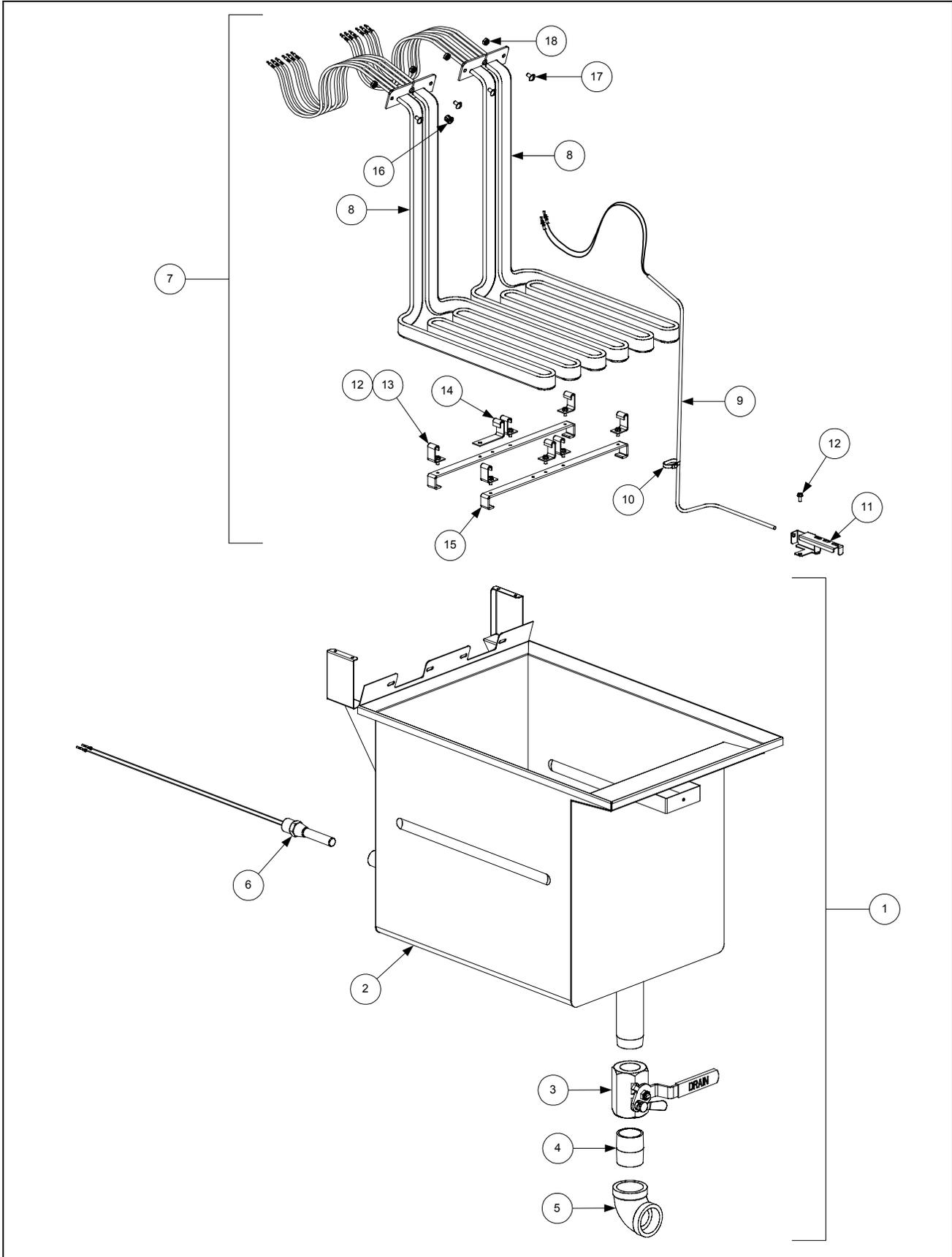
8.3 Controller and Contactor Box Components



ITEM	PART #	COMPONENT
1	106-0142SP	Contactator Box Assembly, Navy Submarine
2	200-0204	Brace, Contactator Box Rear
3	802-0742	Label, Ground
4	806-7187SP	Wire Assembly, Right Element (see Page 8-8 for schematic)
5	806-7189SP	Wire Assembly, Left Element (see Page 8-8 for schematic)
*	806-8243SP	Wire Assembly, Navy Transformer (see Page 8-8 for schematic)
6	806-7935	Interface Board, Navy Shipboard
7	806-8345SP	Harness, Navy Submarine Fryer (see Page 8-8 for schematic)
8	806-8346SP	Cable, Navy Submarine Controller (see Page 8-8 for schematic)
9	806-8364	Stud Assembly, Interface Board
10	807-0012	Relay, 18 Amp 1/3 HP 24V Coil
11	807-0064	Transformer, 480V/120V 150VA
12	807-0067	Terminal Block, 8-Pin
13	807-0069	Circuit Breaker, 10 Amp
14	807-0070	Terminal, Ground Lug
15	807-0855	Transformer, 120V/12V 20VA
16	807-1683	Relay, 12VDC
17	807-2181	Transformer, 120V/24V 62VA
18	807-2284	Contactator, 50 Amp Mechanical 24V Coil
19	807-2464	Power Block, Delta
20	826-1365	Screw, 6-32 X 3/8-inch Truss Head (Pkg. of 25)
21	809-0123	Screw, #10 X 3/4-inch Slotted Truss Head
22	826-1366	Nut, 4-40 Keps Hex (Pkg. of 25)
23	809-0250	Nut, 6-32 Keps Hex
24	826-1376	Nut, 10-32 Keps Hex (Pkg. of 10)
25	809-0349	Spacer, 4mm X 6mm Aluminum
26	826-1359	Screw, 4-40 X 3/4-inch Round Head (Pkg. of 25)
27	809-0359	Screw, #8 X 1/4-inch Slotted Hex Washer Head
28	826-1374	Screw, #10 X 1/2-inch Hex Washer Head (Pkg of 25)
29	809-0448	Clip, Tinnerman C1350-10A
30	810-0743	Plug, 3/4-inch Hole
31	810-1202	Contactator, 3-Pole 600V 40 Amp
32	900-2752	Plate, Cordset
33	900-4983	Back, Contactator Box
34	900-4984	Box, Contactator
35	900-8304	Cover, Contactator Box
36	806-9215	Controller, Navy Submarine Fryer (<i>Includes Items 23, 37, and 38</i>)
37	810-0387	Knob, Control (<i>Component of Item 36</i>)
38	826-1358	Nut, 6-32 Hex (Pkg. of 25) (<i>Component of Item 36</i>)
*	812-1353	Cable, Controller to Contactator Box (See schematic on Page 8-9)
39	900-8612	Shield, Controller Heat
40	106-3438	Bezel Assembly, Submarine Controller

* Not illustrated.

8.4 Frypot, Elements, and Associated Components

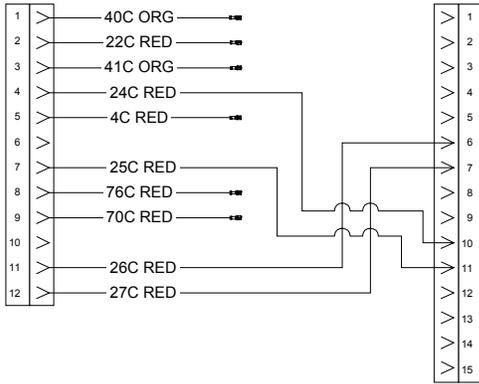


ITEM	PART #	COMPONENT
1	106-0044SP	Frypot and Drain Assembly, Complete <i>(Does not include Item 6)</i>
2	823-2895	Frypot, Navy Submarine
3	810-1569	Valve and Handle Assembly, 1.25-inch Drain
4	813-0391	Nipple, 1.25-inch X Close NPT
5	813-0070	Elbow, 1.25-inch X 90°
6	806-7543	Thermostat Assembly, 425° High-Limit
7	806-9771SP	Element Assembly, Navy Submarine <i>(Does not include Items 17 and 18)</i>
8	807-3268	Element, 440V/7kW Navy Submarine
9	807-3269	Probe, Navy Submarine Temperature
10	809-0567	Tie Wrap, Metal
11	910-5022	Bracket, Temperature Probe
12	809-0518	Screw, 8-32 X 3/8-inch Slotted Hex Washer Head
13	910-2042	Clamp, Element
14	910-5213	Clamp, Element and Probe
15	910-8932	Support, Element
16	826-1339	Bushing, .375-inch Split (Pkg. of 10)
17	826-1330	Screw, 10-32 X 3/8-inch Slotted Truss Head (Pkg. of 25)
18	826-1376	Nut, 10-32 Keps Hex (Pkg. of 10)
*	806-7796SP	High-Limit and Probe Wiring Harness (See Page 8-9 for schematic)

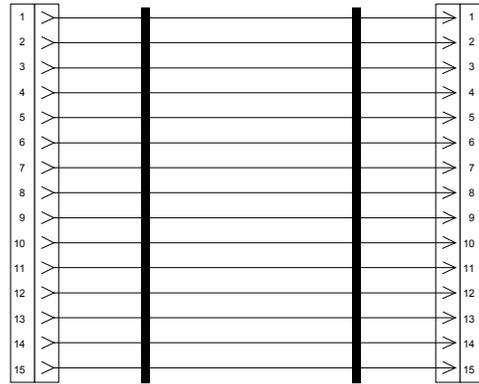
* Not Illustrated.

8.6 Wiring Assemblies and Bundles

CONTACTOR BOX WIRING



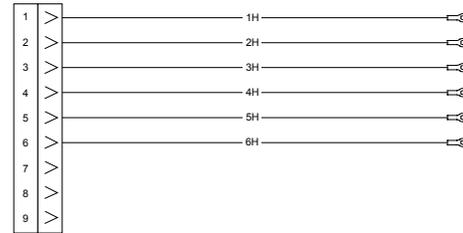
8068345
J2 WIRING HARNESS
 (12-Pin Male and 15-PinFemale Connector, 18-Inches Long)



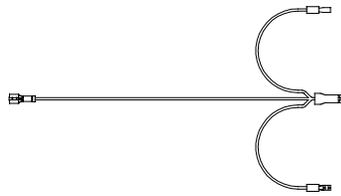
8068346
CONTROLLER CABLE ASSEMBLY
 (15-Pin Male and Female Connectors, 9-Inches Long)



8067189
LEFT ELEMENT CONTACTOR WIRE ASSEMBLY
 (6-Pin Female with 6 Wires)



8067187
RIGHT ELEMENT CONTACTOR WIRE ASSEMBLY
 (9-Pin Female with 6 Wires)



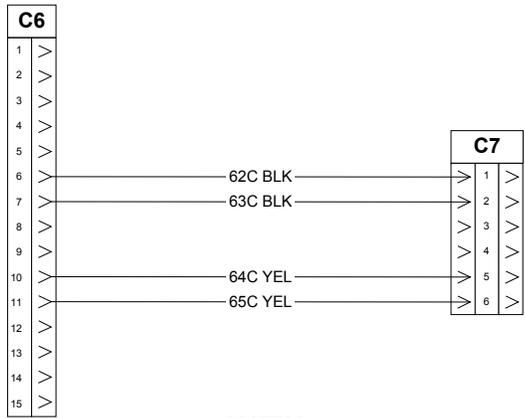
8068243
TRANSFORMER WIRE ASSEMBLY

WIR0286
 WIRE BUNDLE, CONTROLS CIRCUIT

WIR0195
 WIRE BUNDLE, HEAT CONTACTOR

WIR0184
 WIRE BUNDLE, LATCH CONTACTOR

CONTROLLER AND SENSOR WIRING

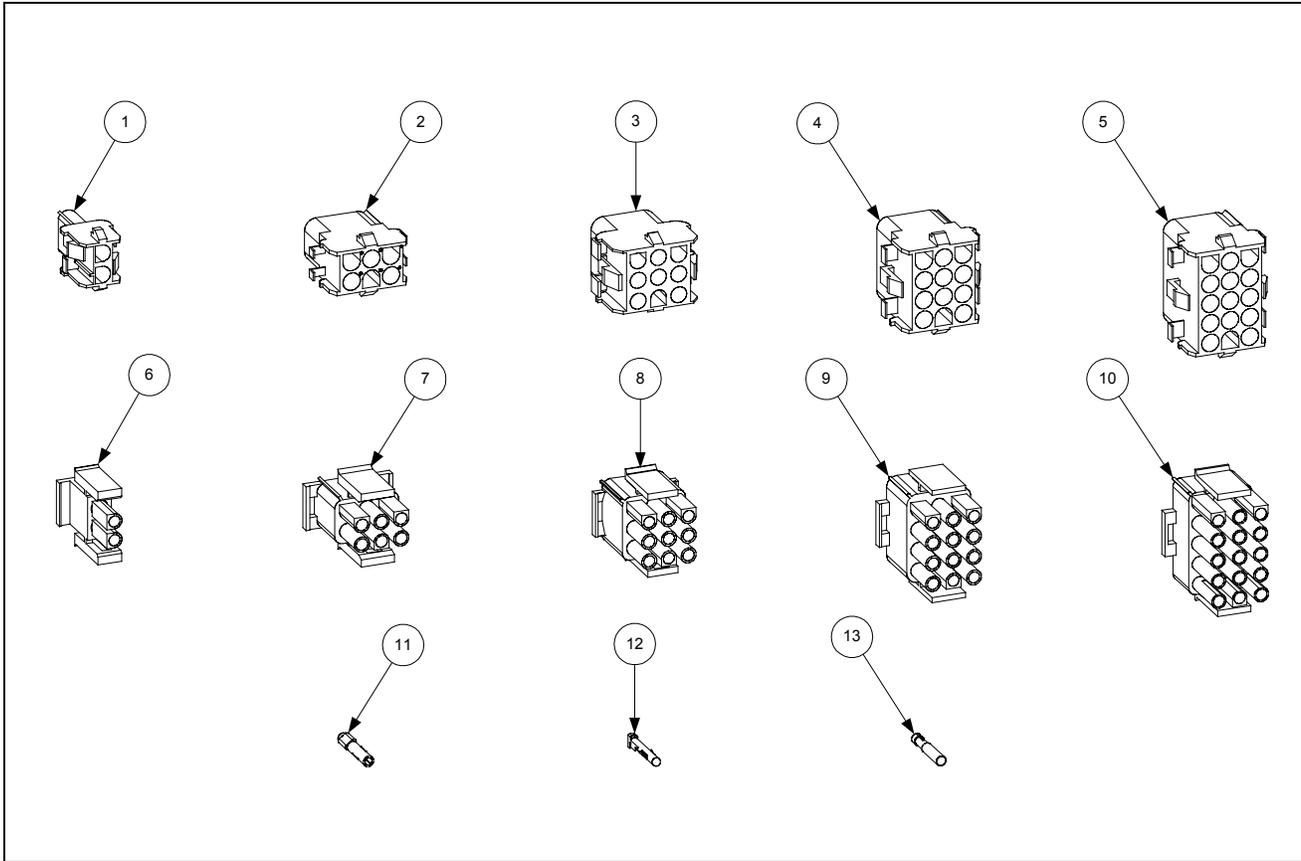


8067796
HIGH LIMIT AND PROBE WIRING HARNESS



8121353
CONTROLLER CABLE
15-Pin Male Connectors on 5-Foot Shielded
Cable (Ferrite Core at Controller End)

8.6 Wiring Connectors and Pin Terminals



ITEM	PART #	COMPONENT
Connectors		
1	807-1068	2-Pin Female
2	807-0158	6-Pin Female
3	807-0156	9-Pin Female
5	807-0159	12-Pin Female
5	807-0875	15-Pin Female
6	807-1067	2-Pin Male
7	807-0157	6-Pin Male
8	807-0155	9-Pin Male
9	807-0160	12-Pin Male
10	807-0804	15-Pin Male
11	826-1341	Terminal, Female Split Pin (Pkg of 25)
12	826-1342	Terminal, Male Split Pin (Pkg of 25)
13	807-2518	Plug, Mate-N-Lock (Dummy Pin)

* Not illustrated.

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7. RECOMMENDED CHANGES TO PUBLICATION			
PAGE NO. A.	PARA- GRAPH B.	C. RECOMMENDED CHANGES AND REASONS	
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